Chapter One

Introduction

1.1 Background to the Study

In every organizational context, performance and productivity are measured to determine the capability and growth of a business enterprise within a given period of time. Across several scholarly discourses, financial performance is critical in making economic decisions as it relate to both the public and private companies. This decisions is based on many cases such as executive compensation, stock prices, stock risk, decisions related to investment, and many other cases[1]. The performance of companies depends on administrative decisions which are implemented within the company and is proven by the ability of managers to manage a business and maximize the owners' wealth. In more broad sense, it alludes to how much financial goals being or has been cultivated. It is the method involved with estimating the consequences of a firm approaches and activities in money related terms. It is utilized to gauge firm's by and large financial wellbeing throughout a given timeframe.

The Profitability of firms is largely determined by the nature of the businesses in which they operate, as well as the possible legal, political, and environmental regulations that establish an important item of public policy within the scope of their operation. The idea of business in which a firm operates characterizes the risks associated with that business, and risk is a crucial component in the profitability of the firm's operation. Higher financial risks pose huge threats to firm profitability; however, they are probably going to generate enormous profits[2]. Financial performance aims to inform stakeholders and thus encourage them to make decisions, which is a financial case for the company that includes the collection and use of funds and demonstrates the company's ability to manage and control its resources. Analyzing financial ratios during a specific time is the best way to measure financial

performance of companies[3]. Environmental accounting disclosures decidedly sway the business worth of an association, and consequently work on financial performance[4].

Generally, proper disclosure of environmental management practices is of paramount importance to business organizations, hosting community, other stakeholders to the organization and nations at large. This significance is because of expanded familiarity with the cooperation among firms and environment where in they work worries about assets exhaustion, assets scarcity, environmental debasement, oil spillages, water contamination, air and clamor contamination, wellbeing perils, contamination of the communities. The result of the corporate organizations activities on the environment has led to the depletion of the ozone layer and thereby causing imbalance in the environmental system. These increasing concern about the environmental degradation, resources depletion and quest for sustainability of economic activity have made the improvement of environmental accounting and reporting an area of significant interest in Nigeria[5].

The growing concern over resource depletion and environmental degradation is accompanied by a number of issues. Proper administration of the environment has thus become one of the key missions of many industrial companies and nations in general; as the success and accomplishments of most industrial companies and other business organizations are now largely built upon the positive impact of the activities of the organizations on their hosting communities and other stakeholders (employees, suppliers, customers, the government, and others), not only on products and services of the organizations. Positive reactions to ecological and cultural issues via bookkeeping and disclosure leave the financial backers and different stakeholders with the certainty that the firms they are dealing with are straightforward and socially mindful. Government regulations, prevailing difficulties gatherings and green buyer pressure are a portion of the latest things and ongoing advancements stirring company's thoughtfulness regarding the administration of

environmental expense in order to upgrade execution and accomplish upper hand. Weak legal and regulatory frameworks do not encourage proper environmental management within the communities hosting some of the high-powered companies[6,7,8].

Considering this large number of environmental difficulties confronting producing firms, for example, the executives of greenhouse gas emissions from consuming of fossils, contamination outflows, sewage contamination from factories, harmful material removals typified assets issues synthetic defilement, modern waste the board and farming among others. The study is initiated to investigate the environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria.

1.2 Statement of the Problem

In recent decades, concerns for environmental safety and depollution increased and attracted scholarly debates across the globe, as environmental disclosure was approached from health, social and organizational perspectives to determine its ripple effects on various aspects of the society[9].In more recent years, more studies closely examined the dynamics in organizations' approach and commitment to environmental preservation, especially how oil and gas companies' activities brings about environment pollution, spillage and gas emissions amongst others effects of manufacturing activities that deplete environmental performance.[10, 11].The pollution's impact on the environment due to the activities of oil and gas companies brought about global debates on climate change, global warming, renewable energy, mitigation and how the environmental performance of oil and gas companies directly or indirectly affect their financial performance[12]. These debates on environmental accounting disclosure and the need for environmental accounting are largely discussed among researchers in developed countries, while only fewer scholarly discourse in developing countries like Nigeria critically reinforce the need for sustainable environmental performance among producing companies in the region[13].

Oil and gas companies in Nigeria have really been known to cause numerous environmental issues in the areas where they function, primarily because of their ever-increasing approach to ensure profit maximization and implementation of various advanced oil exploration method in their activity. It is dejected that despite the significant benefit accruable to these oil and gas industries quarterly and yearly, most of these petroleum companies continue to believe that any expenses incurred on environmental issues will frequently bring about additional cost to them for the time being, which may likewise diminish their effectiveness and efficiency in the long term[12]. Additional, extra expense incurred on environmental cost will typically result in significant cost reductions in the medium and long term, and if done appropriately may result to additional income[14]. Therefore, it is necessary to consider why the majority of oil and gas producing companies are still not genuinely environmentally friendly, particularly in the societies in which they operate, despite the fact that this initiative has the potential to improve the organization's image while also resulting in significant cost reductions in the medium and long term.

This study therefore seek to investigate environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria.

1.3 Aim and Objectives of the Study

The aim of this study is to examine the effect of environmental accounting disclosure on the financial performance of listed oil and gas companies in Nigeria with specific objectives as to;

i. determine the effect of environmental conservation and preservation on financial performance of listed oil and gas companies in Nigeria
ii. ascertain the effect of environmental sustainability on financial performance of listed oil and gas companies in Nigeria

iii. determine the impact of environmental disclosure on financial performance of listed oil and gas companies in Nigeria

iv. investigate the effect of environmental audit on financial performance of listed oil and gas companies in Nigeria

1.4 Research Questions

The following are the research questions of this study:

i. How can environmental conservation and preservation have effects on financial performance of listed oil and gas companies Nigeria?

ii. To what extent can environmental sustainability affect financial performance of listed oil and gas companies in Nigeria?

iii. To what degree can environmental disclosure affect financial performance of listed oil and gas companies in Nigeria?

iv. In what way does environmental audit affect financial performance of listed oil and gas companies in Nigeria?

1.5 Hypotheses

Ho1: Environmental conservation and preservation has no significant effect on financial performance of listed oil and gas companies in Nigeria

Ho2: Environmental sustainability has no significant effect on financial performance of listed oil and gas companies in Nigeria

Ho3: Environmental disclosure does not have any significant effect on financial performance of listed oil and gas companies in Nigeria

Ho4: Environmental audit has no significant effect on financial performance of listed oil and gas companies in Nigeria

1.6 Significance of the Study

In the past years, concerns regarding climate change, global warming and also how to depopulate our environment gained popular media in global scholarly debates. The significance of this study attempts to accentuate various ways oil and gas companies populates the environment and how it affects their financial performance. The study will lay out environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria. The study outcome will be useful such that it will result in increasing needs of different stakeholders and shareholders such as investors, policy makers, government, diverse environmental committee etc.

This study will provide potential and current investors on the risk and opportunities associated with quality environmental reporting/ disclosures and its financial performance with respect to whether to put resources into the organization's share.

It will also give board of directors' clearer ideas on how to incorporate environmentally friendly operation or strategies into the company's operation in order to meet today stakeholders' expectations and Policy makers will also be able to monitor the environmental strategies that drive firm performance.

The study will also contribute to the body of knowledge by adding to the existing literatures on the subject matter of environmental accounting disclosure especially in the developing countries of the world where there were little literatures on this subject matter.

The result of the study will assist the government and government agencies to focus on building a sustainable nation using the 17 SDGs as a manual and also on the need to create efficient regulations on environmental disclosure.

Lastly, the study will also add value to accounting researchers and the data will be of help to scholars in their studies on the same topic. Findings from this study can likewise be utilized

as a basis for further empirical researchers on environmental and financial performance in Nigeria.

1.7 Scope of the Study

The scope of this study is restricted to examining the environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria. The selection of oil and gas companies in Nigeria that constitutes the sample size for this study was gathered from the 13 listed oil and gas companies on the Nigerian Stock Exchange as at 31st December, 2020. The timeframe chosen in the review span from 2011 to 2020.

1.8 Limitation of the Study

The limitation of this study is that it focuses on oil and gas companies in Nigeria, to the neglect of firms in other manufacturing and economy sectors. The exercises of firm in those other sectors may also have significant environmental consequences.

1.9 Operational Definitions of Terms

Environment: The state of a particular geographical area especially as affected by various human activities.

Environmental Accounting Disclosure: Environmental accounting disclosure is the disclosure of financial and non-financial information.

Environmental Audit: An environmental management tools for measuring the effect of certain activities on the environment against standards.

Environmental Conservation and Preservation: the efficiency and effectiveness in the utilization of natural resources.

Environmental Sustainability: the capability of the environment to function properly indefinitely without depleting its nature resources.

Financial Performance: financial performance alludes to how much financial objectives are been achieved.

Profit after Tax: It is the total earnings after all tax have been deducted.

Profitability: It is the final measure of economic success accomplished by a company according to the capital invested in it.

Return on Asset: It measures the profitability of a business in relation to its total asset

Return on Equity: This indicate how much returns is created by investor about invested fund by them.

Endnotes

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Chapter Two

Literature Review

This chapter discussed the related conceptual, theoretical, and empirical review relating to environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria. It presents the relevant literature which motivates the empirical investigation of this study. The review is presented in the following subsections below:

2.1 Conceptual Review

2.2 Theoretical Framework

2.3 Review of Empirical Studies

2.4 Conceptual Framework

2.5 Summary of the Reviewed Literature

2.1 Conceptual Review

2.1.1 Concept of Environmental Accounting Disclosure

Environmental Accounting Disclosure (EAD) as of late are progressively acquiring noticeable quality in various areas of the planet as organizations, companies' and conglomerates presently try to advance their worth to guarantee long haul sustainability by focusing on the exposure of environmental issues by an element for the planning of environmental financial statements. The call for foundation of reporting standards bordering on environmental accounting disclosure (EAD) has risen above limits and more today prominent public interest is extending a direct outcome of the world globalization and the necessity to cultivate practical advancement that will be useful for the human and corporate organizations to work efficiently[1]. This has prompted upgraded accounting practices likeness of financial reports for investors, analyst and controllers and furthermore new difficulties. This way to deal with reporting has become essentially significant given the way that globalization has become a vital driver of progress. The elevated spotlight on environmental

accounting disclosure (EAD) comes from the requirement for organizations to familiarize stakeholders about their environmental exhibition to upgrade core values and corporate picture as well as making base for further developed earnings and operations in the long run since businesses affect the environment[2]. Investors in developing nations are turning out to be progressively inspired by the environmental policies, effects and practices of business elements given the activities of few oil and gas and telecommunication companies.

Be that as it may, financial statements have not generally given this information. Thus, there is obvious sign that a few listed organizations in the developing countries are starting to publish sustainability report complying with the Global Reporting Initiative ("GRI"), an organization founded in 1997, to establish a sustainability reporting structure for business. The GRI Sustainability Reporting Guidelines gives direction to entities on the best way to quantify and report on managements approach to the economic, environmental, and social aspects that impact on their businesses. Notwithstanding consistence by organizations in the developed countries concerning satisfying this disclosure mandate, head contentions, discusses and disputable issues have still been seen by organizations in the developing countries with respect to environmental accounting disclosure (EAD).

Environmental accounting disclosures (EAD) is into two parts: mandatory and voluntary disclosures. While mandatory environmental accounting disclosures are where companies' sustainability information is disclosed based on the country's legal rules and regulations, voluntary environmental accounting disclosures are the disclosure of companies' environmental information voluntarily without any legal obligation. Companies recognizes that it is their corporate obligation to achieve sustainable development by meeting the present necessities without jeopardizing the capacity of future generations to meet their own needs, informed their choice of environmental accounting disclosures practices to the stakeholders in the environment where they conduct their business activity[3].

Environmental accounting, which is occasionally alluded to ‘green accounting’ or ‘environmental management accounting is an essential component of the accounting wilderness since it consolidates the conventional accounting reporting with ecological reporting[4].The phrase "environmental accounting" has several different connotations. Environmental accounting is frequently used to refer to the identification and reporting of costs that are specifically related to the environment, such as liability costs or waste disposal costs. When a company makes modifications to its goods or operations that also have an influence on the environment, environmental accounting considers all associated costs and benefits[,]. When a company makes changes to its products or processes that also have an impact on the environment, environmental accounting considers all associated costs and benefits.[5]. Green accounting for the most part utilizes currency or other non-financial units to record information connected with natural resources and the environment[6].

Environmental management accounting records the connection between corporate activities and environmental issues. Environmental accounting disclosure rankings are important indicators of a company's organizational effectiveness, indicating to the public the company's viability and social adaptability, fostering a favorable business environment in terms of the economy, society, and politics, improving access to capital markets, and luring investors. Positive environmental accounting disclosure essentially acts as a signal that influences the actions of corporate consumers and stakeholders of the same organization as well as outcomes regarding the significance of earnings in determining stock return expectations[7].

Environmental accounting fundamental assignment is to demonstrate how much environmental resource abundance, like the capacity of environmental resources, the quantity, and market price. Along these lines, environmental accounting information is the arrangement of information connected with both traditional and environmental related issues to stakeholders of accounting information. Environmental accounting is the act of utilizing

conventional accounting and financial principles to work out the costs that business tasks/exercises will have on its environment[8]. The basic function of Environmental accounting is to provide quantitative in formation of financial nature, the cost of environmental activities of a corporate entity and the benefits of such activities to its immediate/host community. Thus, Environmental accounting is that branch of accounting structured to identify measures that enable companies communicate its activities on environmental conservation efforts and associated benefits. Generally, environmental accounting is a set of approaches and principles employed by management of organization to give, knowledge into the actual streams, costs and expected advantages that energies effective finishing of environmental conservation exercises that are in features.

The features are basically two to be specific: Environmental conservation costs (Monetary worth) and environmental socioeconomic benefits (actual units and money related value)[9]. Accurate quantitative measurement of data using environmental accounting relating with every one of the facts is an effective way to identifying and measuring investments of organization in its environment. Environmental accounting information isn't just utilized by organizations inside but also outside, by public for information about social responsibility concern of an entity. Environmental accounting information in yearly reports of entities is critical as the information is a disclosure of performance concerning social responsibility and accountability. The point of the revelation is to empower ventures accomplish reasonable presence and keeping up with amicable connection with the host community while seeking after compelling and proficient environmental conservation[10].

With the nonstop corruption of the environment because of expanding modern movement, there is an expanding call for environmental accounting in organization determined to keep the records of environmental exercise to know whether the information produced altogether affect the performances organization the greater part of particularly the of oil organizations

which are the main organization delivering the most elevated harmful into the general public as a result of its inland and seaward operations[11]. Environmental accounting covers information relating to all aspects of the environment. It serves as a systematic approach in managing the environmental aspects of company activities. Environmental issues limit the advancement of businesses. Investors for the most part focus on the organization's financial circumstance while little or less consideration is paid on its corporate environmental performance. This has prompted the requirement for the mining organizations to fortify environmental accounting to accomplish composed advancement of environmental and economic benefits.

2.1.1.1 Scope and Objective of Environmental Accounting

Assessing cost associated with ecological impacts is not easy to accomplish yet it is conceivable since the assurance of costs to serve as replacement costs can be done for both nature services and natural capital[12].Determining the scope of environmental accounting has been difficult as it is very wide in nature, covering corporate level, national and international level[13]. Environmental accounting continues to influence traditional accounting methods, particularly financial accounting, for providing a limited view of the interaction between the natural environment and organizations, thereby purposefully restricting the subject of accounting. Looking at environmental accounting from the aspect that; investment corporations made to reduce detriments caused to the environment such as investing in environmental protection equipment as all types of damage done to the environment are indirectly due to organization’s activities and placing monetary value on this information is certifiably not an easy mission in accounting. It is stated further that it is not visible attaching measurement or value to damages done to the environment especially when calls are made to place such responsibility on the industry as this can only be done through identifying the quantity of non-renewable natural resources used[9].

Environmental accounting is meant to show organizations' commitment to sustainability, determination of organizations' accountability and transparency that would help boost ethical investment, It emphasizes the idea that businesses affect their external environment through their operations in both positive and bad ways, and that they ought to take these effects into account as part of their regular accounting procedures, it also encourages disclosure of environmental data to the society particularly the stakeholders and this polishes the picture of the organization[14]. They stated further that the advantages enjoyed from adopting environmental accounting are that it creates knowledge of environmental related costs and thereby make available measures of reducing or avoiding them while improving environmental performance. It serves as an effective instrument for making management aware and taking proactive decisions on environmental issues and proving to stakeholders that companies are environmentally conscious.

Environmental accounting is divided into three disciplines[15]. They are as follows.

i. Global Environmental Accounting

ii. National Environmental Accounting

iii. Corporate Environmental Accounting

Corporate Environmental Accounting is divided into two:

a. Environmental Management Accounting

b. Environmental Financial Accounting

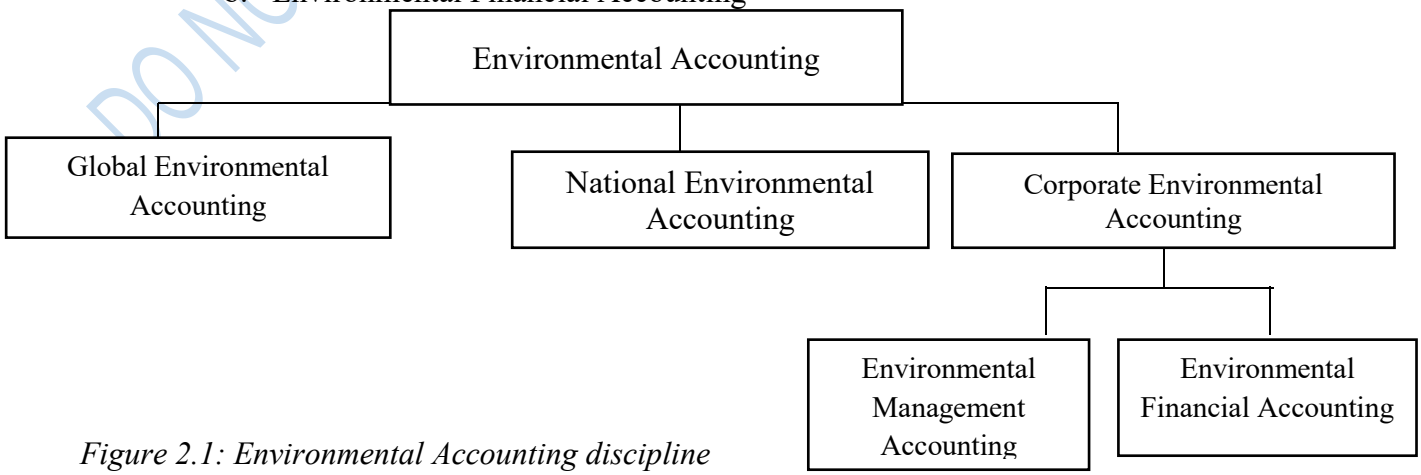


Figure 2.1: Environmental Accounting discipline
Source: Researchers Findings 2022

2.1.2 Environmental Accounting Practices

Environmental effects, which lead to business region costs, contamination, ground pollution, debasement, and negative human exercises, have prompted to an incredible worry by investor. Stakeholders, the community, and the national government are concerned about the effect on performance, sustainability and stability of organization in the various business environments[16].Environmental accounting practices affect financial reporting through disclosure of the practices of the practices as specified by segments 352-354 of Company and Allied Matters Act 1990as amended in 2004, Financial Reporting Council of Nigeria and Ministries of Environmental and Natural Resources to upgrade environmental disclosure specify a few regulations and guidelines to direct financial reporting. Some of the environmental disclosure practices are:

Safety Related Measure Disclosure: This action is to direct against risky herms in the work put that might affect productivity and execution. This practice includes installing control system in industrial hygiene against risk management hazard. The utilization of hazardous facilities, machinery and procedures will have wellbeing and safety impacts for business sustainability[17].

Waste Management Disclosure: waste in an organization is an enormous overflow of something, without being utilized, a portion of the economies of firms, a slow misfortune or rot, obliteration brought about by catastrophic event, abundance materials named futile by-products or damage unsalable products which have influence on the economic and operational performance of the firms[18]. Waste management disclosure cover treatment and how waste will be managed, pollution, reparation, resourcing cost, and conservation cost. It likewise takes care of regulatory enforcement costs like depreciation of equipment and machineries exchanges materials, water and power, facilities outside the organization,

penalties, insurance, and remediation cost which will influence on the organizations' residual value[19].

Environmental Protection Disclosure: it's a known fact that capital market reacts to information and events in the corporate environment that have huge effect on the execution as impacted by the financial and reputational opportunities for control if information is properly disseminated to the community. There is always a negative reaction to the position of the company assuming that they are adverse and negative environmental changes like degradation, spillage, penalties due to violation of laws and regulations[20].

2.1.3. Environmental Cost

They are cost caused by organizations to safeguard the environment, prevent environmental issues, and limit harms to the environment. They are those costs brought about in consistence with, or anticipation of break of environmental regulations, guidelines, and organization policies. Be that as it may, the genuine environmental cost for a company can be far more extensive, including costs of resources both those straightforwardly connected with production furthermore those associated with general business activities, squander treatment and disposal costs the expenses of poor environmental reputation and the expenses of charging an environmental damage premium. The U.S. Environmental Protection Agency (1996) defines environmental costs as those costs that have a direct financial effect on an organization (internal costs), and costs to people, society and the environment (outside costs).it is likewise the environmental degradation, an entity expenses for the environment and its clients because of it operations. Environmental costs consist of environmental measures and environmental losses. They incorporate cost of reusing materials, cleanup costs, or moderating energy, conclusion costs, capital consumption and development expenditure. These costs are brought about in forestalling, diminishing, or fixing harm to the environment and conserving resources. However, environmental losses are costs, which carry no

advantages to the business. For example, fines, punishments, remuneration, and removal misfortunes connecting with asset which must be rejected or on the other hand deserted on the grounds that they harm the environment[21].

Environmental cost can be arranged into costs that are directly sway on an organization's bottom-line which are alluded to as private cost and cost for people, society, and the environment for which an organization isn't accountable, which are called societal cost. Private costs can additionally be ordered into, conventional costs, potentially hidden costs, contingent costs and image and relationship costs. This order makes both a choice situated information basis for the environmental management system and for the preparation; control and oversight of material and energyflows[22]. They are hereby discussed:

Conventional Costs: The costs of utilizing utilities, raw materials, capital goods, and supplies are normally tended to in cost accounting and capital budgeting. In any case, the environmental segments of these costs are not typically considered environmental costs. It is critical to factor these costs into business decisions, regardless of whether not viewed as environmental costs.

Potentially Hidden Costs: These are environmental costs that might be possibly stowed away from directors due to their rare nature and the fact that considering their collection in organization overhead records. Various kinds of environmental costs that might be possibly stowed away from managers are forth right environmental costs, regulatory and voluntary environmental costs, and back-end environmental costs.

Contingent Costs: These are costs that could possibly be caused sooner or later. Examples include the cost of helping and making up for future unintentional arrivals of toxin into the environment, (example oil slicks), fines and penalties for future administrative infractions. Since these expenses may not as of now should be perceived for different purposes, they may

not get satisfactory consideration in internal management accounting systems and forward-looking decisions.

Image and Relationship Costs: These expenses are incurred in designed to persuade management's, customers', employees', communities', and regulators' subjective (though measurable) perceptions. These cost also have been regarded to as "corporate image" and "relationship" cost. Costs for yearly environmental reports and local area relations exercises, costs caused willfully for environmental activities (for example, planting trees) and charges for recognition programs can all be included in this category.

Societal Costs or External Costs: These are the costs which a business imposes on the environment and the society for which it is not legally liable. They include destruction of the environment and negative effects on people, their property, and their well-being that cannot be compensated for it through the legal system. Now, valuing societal costs is both difficult and contentious; however, it is critical for any environmentally friendly organization to determine external impacts and, to the greatest extent possible, value societal costs in order to incorporate them into its making plans and judgment.

Damage to a river because of polluted waste-water discharge, to ecosystems because of solid waste disposal, or to asthmatics because of air pollutant emissions are all examples of external costs that an industry must bear[23].

2.1.4 Environmental Audit

An environmental audit is a process that quantifies a company's environmental performance and position. It is an independent third-party assessment of an organization's current compliance with local environmental laws and regulations[24].The goal of an environmental audit is to investigate the positive and negative effects of an enterprise's activities on the environment. The requirement for an environmental audit varies by organization, contingent

on the auditing objectives. It isn't available as a ready-made package that can be applied to all situations. Accordingly, the environmental audit procedure should be planned in accord with the auditing objectives. For best results, it should be combined with other effective environmental tools such as Environmental Impact Assessment (EIA) and Environmental Management System (EMS). The purpose of the environmental audit is to provide management with information about how well the environmental organization system and equipment are performing. Audits must be viewed as the company's responsibility in order to serve this purpose. The audit work can be done voluntarily and for the benefit of the company. The audit work can be completed systematically and efficiently with the assistance of an environmental auditing program. It aids in the optimal use of natural resources and, as a result, improves environmental quality. Environmental auditing is essentially a tool for environmental management that measures the impacts of specific exercises on the environment against predefined measures or principles. There are various kinds of environmental audits based on the norms and the focal point of the audit. Companies of all types have recognized the significance of environmental issues and acknowledge that their environmental performance will be investigated by a diverse group of stakeholders. The environmental audit is one of the most significant aspects in sustainable development, and it is a deliberate and planned effort to integrate the environment, including resources, into the development procedure in order to guarantee the ability, welfare, and nature of now and coming generations. All whilst, the US Environmental Protection Agency (US EPA) is fully confident that environmental auditing is an effective regulatory tool, so in causality, an environmental audit cannot be viewed as a company's voluntary effort, but also as a mandatory requirement[21].

Environmental auditing is a new component of corporate strategy. It is the natural consequence of a growing environmental awareness that began during the 1960s and

culminated in the 1990s with the realization that every organization and individual has a responsibility to contribute to the resolution of global environmental issues. In relation to the significance and position of environmental audits, many businesses are already looking for ways to turn this threat into an opportunity by making improved environmental performance in their operations and products a source of competitive advantage[25].They hope to convert liability "fear factors" into business opportunities by publicly reporting on their efforts. Furthermore, the use of sustainability audits aims to analyze the issue of environmental problems, management which has been implemented, and the efforts which have been undertaken in environmental management. There are two important aspects of environmental auditing that cause disagreements, namely;

First, consider the nature of environmental audit information; second, consider the significance of ensuring auditor independence. The findings of an environmental audit, whether the information is restricted to the enterprise in question or is available to anyone who wants to know. In accordance to the EPA's Policy Statement, there are 5 (five) requirements that should be met for an environmental audit to function effectively as an internal environmental management tool in a business entity, which are as follows: For starters, there is support from the business entity's leadership for the execution of the environmental audit. The follow-up consists essentially of corrective measures to the management practices of the realization of environmentally based management; Secondly, the independence and objectivity of the auditors, the position of auditor organization must ensure the searching of current management practices. The independence of the auditor also realizes when auditors can perform objective tests and free from internal constraints; thirdly, the skills of the environmental auditor, they must have the knowledge and skills to achieve the environmental audit objectives. Auditors must continually improve their skills through training and education; Fourthly, the objectives and scope of the environmental audit should

be clear. At least, the objective to be achieved is to analyze adherence to environmental requirements instituted by the competent authority, management, personnel training programs for the accomplishment of continuous adherence. However, the environmental audit objective may also be more than an effort to conform with the requirements set by the government; and fifthly, through methods and processes of collecting, analyzing, interpreting, and documenting information, compiling clear reports on audit findings, corrective actions, and implementation schedules. Ideally, voluntary audits are actually the utmost efficient audits compared with mandatory audits. This audit is certainly done because the awareness of the organization management has the potential to produce optimal results so that its environmental performance will be optimal.

A mandatory audit, on the contrary is not always necessary when it depends on full awareness to improve environmental performance, even if the public relations component is more dominant than the seriousness to control environmental impacts. Thus, strict quality control was required during the audit, audit implementation process, and post-audit. The audit task is completed by a neutral party who obtains and evaluates appropriate evidence to guarantee that the organization does not commit acts that harm the environment. It is otherwise recognized as evaluating the outcomes of implementing national and local policies, plans, and programs aimed at protecting and preserving the environment and also measuring the influence of the organization's operations on the environment in compliance with approved standards and, if possible, indicating the cost[26].

Hence, environmental auditing can be thought of as an environmental instrument for ensuring that public resources were utilized efficiently, effectively, and to accomplish the desired goals. The study also mentioned that environmental audit could be important mechanism to achieve sustainable development. Environmental audit also being viewed as a management mechanism in environmental management system (EMS) to disseminate the result to interest

stakeholders and users about organization's compliance with the environmental laws and regulations[27].Since the magnitude of these disasters and possible effects that the people could sustain injury, loss of live and businesses, intensive efforts have been taken by many countries, business corporations, non-profit organizations also as individuals to help deal with these environmental concern in order to preserve the environment through environmental auditing. Environmental auditing is the method of comparing an organization's environmental performance to its environmental policies and objectives. These policies and goals must be clearly defined and documented. In practice, however, first-time environmental audits are frequently performed less rigorously due to a lack of appropriate documentation at this stage. Finally, environmental auditing aids in the continuous revision of environmental policies to fulfil the global green economy. Environmental auditing is basically a type of environmental management technique for assessing the environmental impact of various activities against predefined criteria or standards[28].

Companies of all types presently acknowledge the significance of environmental issues and admit that their environmental performance will be analyzed by a diverse group of stakeholders. These are used to assist in the improvement of existing human activities with the goal of reducing the negative effects of these activities on the environment. An environmental auditor will conduct an efficient and detailed study of an organization's environmental effects and will generate an environmental audit report. There are numerous reasons for conducting an environmental audit, including environmental legislation and customer pressure[29]. Whenever an improvement is set up, environmental auditing is used to monitor an existing practice and assess the environmental effects of current activities. Thus, environmental auditing provides a 'snapshot' of what is going on in a company at the time[25,26]. The International Organization for Standardization (ISO) has developed a set of environmental auditing standards. These standards are primarily intended to instruct

organizations and auditors on the general principles that apply to the execution of environmental audits. Environmental accounting disclosures is a responsibility that is concerned with the awareness that actions taken in the current time affect the options available in the future; thus, if resources are used in the current time and are no longer viable for use subsequently, it poses a grave danger to the future generation, especially if the resources are limited in quantity[30].

2.1.4.1 Objectives of Environmental Audit

Pollution can be reduced with the help of an environmental audit. Improved production safety and health and also conservation of natural resources can be stated as the overall goal of achieving sustainable development. However, to conduct an environmental audit, objectives must be clearly defined; otherwise, the audit technique will be vulnerable to diverse interpretations, which may result in and contribute to variances in approach and influencing the end-results. The following are the objectives of an industry's environmental audit[27]:

i. To discover the material balance of different materials used or the performance of different process equipment to identify material usage that is greater than required.
ii. To evaluate the transformation efficiencies of process equipment and, as a result, set up norms for equipment/operation performance and waste minimization.
iii. Identifying areas of water usage and wastewater generation, as well as deciding wastewater characteristics.
iv. Identify the sources, quantities, and qualities of the emissions.
v. To recognize the solid and hazardous wastes generated, and also their sources, portions, and characteristics.
vi. Identifying waste minimization, recovery, and recycling opportunities.
vii. Assess the performance of existing waste treatment control systems to modify or install additional or alternative control equipment as needed.

viii. Evaluate the effect of wastewater, emanations, and strong squanders from industry on the environmental climate (groundwater, stream, local location, agricultural region, delicate zone) and, if necessary, identify appropriate preventive measures.

ix. To ensure compliance with the standards and conditions imposed by regulatory bodies under the Water Act, the Air Act, and the Environmental Protection Act.

x. To check the success of the industry's organizational structure for decision making and environment protection, taking into account to their technical viewpoint, attitudinal viewpoint, and environmental policy of company.

2.1.4.2 Types of Environmental Audit

Environmental audits are classified into several types depending on the facility's operations, the audit's objectives, regulatory agency requirements, and environmental performance gaps discovered during inspections. Companies must make sure that the extent of the audit (the systems to be evaluated) is carefully considered during the first stage of the auditing process, in order to guarantee that every element required for effective auditing is incorporated into the audit program. Corporate policy, systems analysis, operational procedures and practice, level of emissions, goods, and waste production, use and storage of energy and materials, transportation systems, training procedures, facility maintenance, and emergency procedures are examples of systems to be checked[23]. The following are the primary types of environmental auditing:

Corporate Audit

This type of audit specifically examines management's efficiency and effectiveness in implementing the company's corporate environmental policy. A corporate audit is essentially an audit of a division or unit approved by the company's main board at the company's headquarters[31]. The corporate audit is primarily concerned with the organizational structure to guarantee that chief executives understand their functions and obligation effectively, as well

as to examine the organizational structure that deals with environmental program management, line management responsibilities, technical and advisory support, and vertical and lateral communications, among other things. Corporate audits may include an assessment of;

i. A single company,
ii. An operating division,
iii. A system for environmental management.

Specific audits within in the operating units include:

a. A purchasing audit, which examines how the company sources and purchases raw materials, and also the environmental effect of the division.
b. A transportation systems audit, which investigates the effect of the transportation system on the environment.

Classification of Corporate Audits

Issues Audit

The issues audit is focused on how the company handles critical environmental problems. Issues auditing entails comparing policy, operating procedures, and other guidelines to actual operating practices across all business sectors. Issues auditing is crucial because it helps to reassure concerned corporate head office management that the operating business divisions or plants are environmentally conscious and responsible in all aspects of their operations[32].

Compliance Audit

Compliance auditors determine whether a company is following environmental legislation, industry standards, the host state's environmental regulations, and the company's internal policy[33].

Activity Audit

it is a type of corporate audit through which the implementation of corporate policy on company activities that cross business boundaries is evaluated. An activity audit is, for example, an audit of a group of companies' shipping operations. This could entail auditing all vessels, including barges and supply vessels. This audit examines the company's environmental policy for vessel operations and the management policies required to ensure effective implementation. The above-mentioned audit activity may include dock and deck teams, sailing team members, investigation of vessel running procedures, and examination of environmental standards of certified vessels as well as those managed by contractors[28].

Activity audits are performed in a corporate setting, not with the intent of punishing or policing anyone, but to investigate and assist people in carrying out their duties in an environmentally friendly manner. Activity audits reveal several of the company's organizational flaws that must be addressed. These flaws can occur depending on the range of reasons, which may include:

i. Failure of management to comprehend the strength and intents of corporate policy.
ii. A lack of environmental consciousness because of poor communication and insufficient comprehension of the overall complexities of the situation.
iii. Changes of personnel and inadequate job descriptions which fail to pin-point Environment responsibility of individuals.
iv. Organizational inadequacy and unclear lines of responsibilities.
v. Organizational evolutionary drift in which changes in organizational structure are made without consideration to the original role of people prior to changes.
vi. Changes in company objectives or development phases.
vii. Inadequacy of environmental legislation.

Line management may have insufficient understanding of the systems that operate under them. However it is common for communication downward to be clearly defined, but with no feedback loops allowing grassroots environmental problems to be communicated back up to appropriate top management. This could lead to a serious communication breakdown.

Liability (Pre-Acquisition) Audit

When a client is looking to buy a site, a company, or merge with another, it is used to examine the potential environmental liabilities of a property[34]. It is an effective tool for assuring the buyer that he is not purchasing environmental liabilities or potential liabilities. Before purchasing a property of something like a house, land, or industrial site, a liability audit is performed to assess its environmental status. When a business is considering purchasing a property, it should investigate the previous uses of the property and structure, such as a toxic waste landfill, a hazardous trash dump and gravesite, or other toxins and dangerous chemicals. Typically, audits attempt to identify the degree of contamination that the properties have experienced, which may be a source of future environmental liabilities. The value of a property will differ varying on whether contamination exists, and once this is determined, the purchase price may change to reflect the cost of clean-up and remediation. When someone is looking to buy a property or a company, this type of audit is used as a pre-acquisition assessment activity[31].

Technical Audit

Technical auditing is a management technique utilized to address environmental and safety issues[35]. It is primarily an internal exercise, but many companies hire external consultants to conduct impartial and accurate audits of their facilities, as well as to train or supplement in-house staff expertise. Technical auditing helps a business to assess its rate of compliance with environmental and safety legislations, and also internal, international, and industry standards such as occupational safety standards, procedures, controls, and environmental management

standards. The objective of a technical audit is to assess the facility's environmental and safety performance and develop a corrective action plan. The emphasis is on emissions to the atmosphere, discharges to the sea, and the permits involved. A technical audit helps a business to assess its level of compliance with environmental and safety legislation, and its own standards[32].

Company Internal Audits

Internal audit involves the review environmental administration system, techniques and organization performance utilizing in-house or industry criteria[36]. The reason for internal audit is to empower facility management, acquire objective perspective on the facility's overall environmental performance to foster corrective activity plan for development. Internal audit reports are only available to internal use by facility and line executives. There are numerous components in every internal audit, which must be assessed, including[33]:

i. Comprehension of the process of policy implementation
ii. Regulations and compliance.
iii. Plant design and operation.
iv. Operating procedures and practices.
v. Maintenance practices.
vi. Emergency response plans and contingency measures.
vii. Source and receiving environment monitoring.
viii. Incident reports and remedial action measures.
ix. Environmental training and awareness.
x. Internal and external communication

2.1.5 Environmental Sustainability

Sustainability is considered as the measurement and spread of quantitative and qualitative data financial, social, and environmental execution of the organization in a decent way

comparable to the environment and the society of which it is a section[37]. "Environmental sustainability is portrayed as an endless excursion, where ceaseless improvement and advancements ought to constantly occur and raise new accomplishments and challenges''[38].

Environmental sustainability refers to the ability to interact with the environment without depleting its natural resources, which is the foundation of human existence; it is also the ability to preserve over time the three basic functions of the environment i.e. supply of resources, waste disposal, and direct effectiveness. It can also be referred to as the capability of the environment to function properly indefinitely. It is actually the building block for development. Sustainable development cannot be achieved without environmental sustainability.

The World Commission on Environment and Development (WCED, 1987) describes environmental sustainability as advancement that addresses the issues of the current without jeopardizing the future generations' ability to address their needs. Sustainable Development is also been characterized as a method of social and economic betterment that satisfies the needs and values of all interest groups, while maintaining future options and conserving natural resources and diversity (IUCN, 1980). Environmental sustainability is the scheme's seventh goal, according to the Millennium Development Goals (MDGs).Most of those universally recognized global environmental problems (for example, greenhouse effect, ozone layer depletion, soil degradation, chemical management, acidified rain, and water contamination) are directly or by implication achieved by man's invention, execution, or decommissioning of the built environment. Based on the presumption that most of the environmental problems are prompted by men's activities, social behavior on environmental sustainability is being called for. Nigeria is tormented with a great deal of environmental problems which are now threatening the socio-economic wellbeing of the country due to indifference. There is a need to preserve our environment is essential for the survival of humans and other life forms.

Environmental sustainability is focused with the preservation and maintenance of environmental resources for future generation[39].

The business society needs to comprehend its capability to overcome global climate change issues and make values in a maintainable way[40]. Companies are relied upon to decrease environmental pollution by obtaining low fossil fuel byproducts. In spite of the social and controllers' pressures, organization are neglected to address their environmental concerns[41]. Excessive use of natural resources, waste, and greenhouse gas emissions are the result of direct or indirect use, which has led humans to approach or even cross essential planetary boundaries. Strong social metabolism knowledge is the physical exchange between society and the natural environment, as well as the associated production and consumption processes required to promote more sustainable resource use strategies and worldwide increased temperatures have raised environmental consciousness in the society.

The eruption of the Volkswagens scandal about the emission hazardous is a huge question mark on the execution of green initiatives for achieving desired environmental performance[42,43]. Thusly, because of the environmental extraordinary dangers, present day organizations are more spurred in the reception of the intentional proactive green drives to address their environmental challenges[44]. The relevance of the eco-anti-extremism worldview has been recognized. Even though the cost of being green is high yet it can't be sworn off. Corporate environmental resources is perceived as a multi-facet construct[45]. It tends to be additionally isolated into two-line classification corporate environmental management practices (EMP) and corporate environmental operational performances that are hard to interface consequently. Environmental management practices are "the strategies, policies, and procedures that a business employs to regulate and manage the impact of its operations on the environment." Environmental performance is analyzed to determine how well a product performs when environmental factors are taken into consideration. Environmental

management practices (EMP) and environmental performance have long been a source of contention[44].In this sense, an environmental audit is critical in putting in place adequate environmental management practices (EMP) for achieving the desired environmental results[45]. The reception of environmental audit, stimulate the relevance of internal environmental practices on environmental performance[48].

Prior research, on the other hand, has provided minimal evidence on the impact of environmental auditing on the relationship between environmental management practices (EMP) and environmental performance. Past studies have shown that combining environmental management practices (EMP) with environmental audit has a positive impact on environmental outcomes[49]. The environmental audit is the outsider guarantee regarding the adherence that the firm's environmental management practices (EMP) are being reported and implemented successfully. An environmental audit isn't just helpful for assessing the organization's environmental governance domestically, but also for legitimizing the organization's status in society. Environmental auditing along with environmental management practices (EMP) is the first phase in minimizing business environmental impacts on the environment[50]. External environmental audit programmes are turning out to be progressively significant for companies to reinforce their internal environmental policies. The environmental audit can help to effectively monitor the Environmental Management Practices (EMP)[3].

Human and material (natural) resources make up a country and environmental sustainability is fundamental to the growth of any country as its natural resources underpins their economy. The environment is, therefore, the foundation of all living and nonliving things. With the right climate policy choices, and by working together, countries can spur investment that benefits individuals and the atmosphere. In fact, action on climate is action for sustainable development[51]. Agriculture, animal rearing, fishing, hunting, foraging, and forestry provide

us with a wellspring of living for more than half of the economically active high and growing population of the African race and other developing economies. The requirement for a sustainable source of income while also retaining a good environment straightforwardly explains the impact of the Millennium Development Goal's seventh goal target, which is to achieve "environmental sustainability"[52].

Although when activities leading to environmental damage are brought about by private organizations, especially in a private sector driven economy, environmental sustainability is seen as predominantly a government obligation. It might be claimed that because businesses pay taxes to the government, environmental sustainability and social welfare within their operations should be carried entirely by the government rather than the polluter. The introduction of environmental standards was proposed as an antidote to limit impact through input and output indicators by ensuring a harmonious relationship between businesses, the community, and consumers[53].

2.1.5.1 Forms of Environmental Pollution in Nigeria

There are diverse environmental pollutions in Nigeria, and they can be classified under the following: Oil pollution, Air pollution, Water pollution, Land pollution and Plastic pollution[54]. These environmental problems are a threat to the citizens' lives and must be addressed as soon as possible. It is necessary to emphasize that environmental issues in Nigeria are mostly connected to its petroleum business as well as the largest sector of the economy[51].

Oil Pollution

Oil pollution alluded to the leakage from oil pipes into rivers, streams, and farmlands. This could be because of poor maintenance or sabotage through vandalizing of oil pipelines and storage tanks. Unfortunately, this adds up to thousands of barrels of oil spills every day. Nigerian environment has suffered tremendously degradation especially in the Niger Delta

regions of the country. The occupants of Niger Delta regions, especially women and children experience a great deal of hardship with the annihilation of farmlands and livelihood. Other causes of oil pollution are from burning of toxic wastes, dumping of oil wastes into rivers and streams. This has not only threatened the lives of people in those communities but has also impoverished them. Oil contamination is the major reason of the ecological calamity in the country[55].

Air Pollution

Air pollution is described by the World Health Organization (WHO) as "limited to a condition in which the external ambience atmosphere includes pollutants in amounts that are detrimental to man and his surroundings." When the quality of the air is degraded by the discharge of oxides such as Sulfur, nitrogen, and carbon, it is called pollution. This type of pollution can be influenced by man or even nature. Nature can sometimes cause pollutions, for instance in April 2010, when there was a volcanic eruption in Iceland that saturated the airspace of Europe with ash and lava. This eruption affected air travel and a health hazard[56].

Nigeria is blessed with numerous industries that rely on their own source of power for production. These industries use power generating sets that spew poisonous gases into the air and are known to dump their solid wastes into the waterways. Port Harcourt is currently engulfed with what is now referred to as “Black Soot”. According to a spokesman, the black soot chooses on all and observes its direction into the edge of lounge rooms regardless of how diligently individuals attempt to stop it. Meal goods sold in Port Harcourt markets are also susceptible to being contaminated by the hazardous soot that is evident everywhere[57].

Water Contamination

Water contamination happens when water sources like streams, rivers, oceans, and lakes are contaminated and therefore harmful for consumption by any life form. Water is an essential element for the existence of all living things. Streams, rivers and lakes are the primary

sources of water and its uses cannot be underrated. Water is required for drinking, farming, cooking, bathing and is even a source of livelihood for fishermen. The livelihood of fishermen is threatened when the water bodies are killed by contaminated water. It is disheartening to state that, harmful substances from oil spills and industrial wastes also add to this problem that is a health danger and impoverishes people[58]. Another act that contaminates water is when people dump their domestic wastes into canals and gutters near residential areas. This is common practice in developing countries especially in poor neighborhoods and gives good breeding ground for mosquitoes. Contaminated water aids the expansion of water-borne diseases like typhoid fever, diarrhea, cholera, dysentery and eventually death particularly in the rural communities. In Lagos State on the 16th of January 2017 1,222 students of Queens College, suffered abdominal pain from drinking contaminated water and unfortunately two students died[59]. As observed by a public health specialist,

> About 60 million Nigerians who lack access to safe water are exposed to such water borne diseases as diarrhea, cholera, Dysentery and hepatitis A and hepatitis B. Most of these diseases result in high mortality rate amongst the population[60].

In the metropolitan areas because of the increasing population, lack of proper sewage and garbage disposal systems, domestic and human wastes are dumped into waterways, streams, and rivers when it rains. This causes flooding which occasionally leads to loss of lives and property[61].

Land Pollution

Land pollution occurs when man activities of man destroy earth's surface[62]. Land is man's first contact with his environment and its significance to mankind cannot be overemphasized. Land is the foundation of man's survival and wellbeing. It also caters for animals and plants likewise. Land pollution is another form of environmental pollution that degrades the land, and this can be connected to oil exploitation in Nigeria through oil spills, gas flaring, flooding, the utilization of insecticides and pesticides. Another form of land pollution is deforestation.

A forest is a huge area of land that has trees and trees play a significant part in the life of man, as it is not only the home for animals, food for man but also acts as wind and storm breakers for villages. A forest acts as a shield for man and animals from the direct rays of the sun thereby reducing the influences of global warming. Deforestation is the procedure of felling trees for different purposes. With the increasing population and urbanization, there is now the need to cut down trees for farming, to build houses, industries, roads, for cooking fuel and much more. Deforestation contributes to land pollution as it causes soil erosion and infertility, desertification, and aids flooding. It is pertinent to remember that disabling trees without replacing them can bring about damage of the habitat of all living things. Desertification also contributes to land pollution as it occurs when the desert encroaches on land which was once fertile[59]. This can be induced by man or even nature and if not controlled can lead to famine and extinction of living things.

Plastic Pollution

Plastic bottles, bags and containers are utilized to store water and food. They are convenient and portable for the end user but when not properly disposed, it becomes a type of pollution known as the plastic pollution. Plastic pollution can be defined as "the combination of different various form of plastic coating on land and in water bodies such as rivers, oceans, canals, lakes, and other bodies of water"[63]. This form of pollution reflects also in other types of pollution mentioned earlier in this article namely, oil, air, water and land. These containers do not decompose for years. The effect of plastic pollution is enormous because plastic items are non-biodegradable; they cannot be broken down[64]. We are exposed to health risks from used plastic bottles that have degraded. Chemicals that are comprised of plastics are contained in the exhaust that could be inhaled when they are unpredictably discarded of by burning, which is what we see generally most of the time. The chemical aggravated to medical conditions like cellular breakdown such as Lung cancer and asthma[65].

2.1.6 Environmental Conservation and Preservation

Environmental conservation has emerged as one of the most critical problems to address in the fight against climate change and global warming. It paves the way for individuals, organizations, and governments to safeguard the environment and natural resources[66]. Environmental conservation encompasses efforts to manage nature with the aim of protecting Earth's biodiversity from excessive rates of extinction and the erosion of biotic interactions. Prior lately, conservation was primarily concerned with protecting fragile biodiverse environments by classifications that limit human use or encroachment in ways that enable other species to survive. Notwithstanding, in recent times, the global environmental conservation organization has come to acknowledged that if their projects are to succeed, they must involve local people. The fundamental goal of conservation, then, is divided into two parts, namely: to assure the preservation of a sustainable environment that suggests aesthetic, recreational, and product demands, and to maintain a continuing output of valuable plants, animals, and materials by fostering a balanced harvest and regeneration cycle[67]. Surprisingly, there has been a significant increase in awareness of the threats to the environment in recent times, and a broad variety of environmental challenges is now a source of considerable global concern. These include pollution of the atmosphere and oceans, an unnatural weather change and ozone depletion, nuclear and other extra-hazardous material dangers, and endangered biodiversity. Environmental conservation practice are the disclosure of the cost and benefits. Environmental accounting is one method for a business to interact harmoniously with its surroundings and the society in which it operates. Business stakeholders particularly the host community what to be communicated in clear terms, the benefits created by organization for resources taken from the environment in terms of conservation and preservation. Indicators of environmental conservation benefits include decrease in emissions of environmental pollutants, decrease in noise vibrations and odors,

decrease in wastewater, decrease in total waste emissions, increase in ratio of recyclable waste, decrease in emission of hazardous waste and decrease in environmental pollutants contained in waste among others making the amount of money a company contributes public in financial information making public in financial statements how well a company contributes to a sound environment is a significant piece of performing responsibility that is rewarded by public cooperation and fair appraisal. Entity's environmental report should sufficiently disclose organization's efforts on environmental conservation and associated benefits as part of social responsibility performance[68].

The global institutions supporting environmental conservation include the UN (especially UNESCO and the UNDEP, the United Nations Development and Environment Program); the World Bank and regional development banks (e.g., the IDB, Inter-American Development Bank); and international non-governmental organizations (NGOs).The current conservation planning is focusing more on identifying conservation opportunity areas that is areas which are yet to be preserved, to decrease the spatial extent that needs to be preserved and maximize conservation objectives. The absolute goal of current conservation planning is to increase the protected land estate across ecosystem and biodiversity intense areas[38].

2.1.6.1 Methods of Environmental Conservation

1) Forest Conservation: Agroforestry and replanting contribute to the conservation of forests, which absorb a significant quantity of carbon dioxide from the atmosphere. We must make it a life's ambition to plant as many trees that we can.

2) Soil Conservation: It assists in corrosion prevention and soil improvement for agricultural uses. We should maintain pasture lands and use cover crops to keep soils from blowing away.

3) Garbage Management: Markets, industries, households, settlement areas, and a wide range of other locations produce solid waste. Municipalities should implement solid waste

management programs, such as placing trash bins throughout towns and collecting rubbish on a continual basis.

4) Pollution Control: Pollution should be controlled to the greatest extent practicable. Composing is a skill that might be mastered. Avoid polluting the environment with chemical fertilizers, herbicides, pesticides, and insecticides.

5) Create Public Consciousness: Using various channels such as social media, seminars, and traditional media, raise public awareness about the implications of our activity. Everyone ought to be made informed of measures to conserve the environment and also the potential consequences of failing to do otherwise[67].

2.1.6.2 Traditional Ways of Conserving and Protecting the Environment

Mass Literacy Campaign

For adequate and effective orientation of Nigerians especially at the rural level, mass literacy campaign is recommended to educate more than 80% of the individuals, who are illiterates and therefore cannot understand and appreciate the essence of environmental conservation and protection[66].

Re-Orientation

Nigerians need a completely new orientation or another ethical revolution to change our attitude in the direction of the environment.

Enlightenment Campaign

Environmental mistreats such as uncontrolled bush burning, fertilizer use, livestock grazing, deforestation (90 percent permanent loss of natural habitat for pollinators critical to agricultural production and $1 billion annual loss in non-timber forest products due to rapid deforestation), etc. should be addressed through mass enlightenment campaigns in villages. This should be done through various media such as village criers, landlords, management

board, community development organizations, churches, and schools, among others, to get the message out to all parts of the rural areas[66].

The land-use System Review

While land can be left fallow, bush burning should be avoided since it removes the leaves, sticks, grasses, and other organic matter that would otherwise nourish the soil. Compost manure, made from decomposing leaves, sticks, grasses, and other organic matter, is more natural, more productive, and less hazardous to the soil, crops, people, and animals. It is significantly more environmentally friendly and lasts much longer.

Forest Tracing

To avoid uncontrolled bush burning, communities should embark on forest tracing at the at the start of each year, by clearing forest paths of dry leaves, sticks etc. So that fire in one area will not extend to another area.

Forest Exploitation Control

Forest managers, Conservation Clubs, local leaders, and individuals should collaborate to protect our woods from exploitation. To protect the forests, the authorities should ensure that forest rules are followed.

Abolition of some Habits

Habits such as Argungu festival in Sokoto and annual fish harvest in Bokietc where even the fish eggs are harvested and also as hunting and poaching with extinction should be discouraged and stopped.

Re-Afforestation

This is the method of replanting trees to replace those that have been lost due to logging, bush clearing and burning, and excessive fuel wood harvesting. In the uplands, trees serve as collecting places for subsurface water and as water sheds. Trees help to regulate the climate, offer habitat for a diverse range of plants and animals that are found nowhere else, tie the soil

to the ground, act as wind breakers, and so on. In other words, trees help to conserve the environment.

Formation of Conversation Clubs

Conservation clubs should be formed in our schools and villages as a channel of communicating the messages of environmental friendliness and awareness to the societies. This can be accomplished by practical creative activities on environmental conservation and protection, such as plays, music, debates, symposia, workshops, and others.

Recycling of Wastes

Quarries, industrial processes, households, businesses, and educational institutions all produce solid trash. To safeguard the environment from major pollution, the government, businesspeople, private groups, and individuals should pursue the procedure of garbage recycling.

2.1.6.3 Economic Growth and Environmental Conservation

Economic growth is dependent on environmental factors. It often feels on the environment, transforming environment resources into capital in other forms, while also generating "residual wastes'' into the environment. Thus economic growth, while increasing the supply of goods and services, it also affect the environment and can produce undesirable side effects directly or indirectly[69]. From one perspective, the emphasis on environment may tend to limit economic growth because adequate considerations might not be approved to the best use of various resources to increase material welfare without destroying the resource base for sustained growth. However, the connection between economic growth and the environment is more complicated than such simplistic perspectives suggest. The level of environmental harm associated with economic growth varies among countries according to the development stage, composition of national product, production techniques employed, assimilative and regenerative capability of the environment and people's perception of the environmental

problems. Sometimes, economic growth can assist to preserve the environment[70]. Furthermore, initiatives aimed at resolving environmental problems can be beneficial to economic growth. Economic growth and environmental conservation constitute interrelated components of the multiple dimensions of developmental processes. Then it would be essential for each country to emphasize in its development efforts the complementary aspects between economic growth and the environment. It would also be desirable to accomplish the full growth potential of its resources. Endowment without destroying the environment bases on which sustained growth depends. It is noted that even if the costs of environmental damage must be accepted to attain immediate economic and social objectives, there will always be the option of determining the best means of carrying out actions that would have minimal effect on the environment[69].

2.1.6.4 Environmental Education and Awareness Creation

These ought to be offered essential consideration, particularly in educational curricula, to be able to monitor environmental changes, their sources, and their influence on man, plants, and animals, as well as to responsibly utilized natural resources responsibly for current and prospective human growth. Unsurprisingly, Nigerians are ignorant of the harm they are causing to their environment by activities such as deforestation, bush burning, littering/open dumping of human waste, and polluting waterways with sewage, to name a few. Changes in climate patterns, as well as their increasingly severe repercussions, are also underappreciated. For government executives, parents, teachers, and youth, there is still a lack of established environmental protocol or information system that allows them to acquire environmental information[71].

Nevertheless, existing environmental awareness provisions in national education curriculum, along with research and development programs, are insufficient in providing environmental mindfulness. Furthermore, insufficient environmental regulation and enforcement make it

problematic to coordinate environmental planning and action. Given the world's increasing technical expertise and the intimate relationship between technology advancement and environmental problems, an environmentally literate populace is required. Environmental education, both formal and informal, would be an effective way to raise proper understanding of key environmental issues. Formal education, in particular, is critical for raising awareness, improving extension services, sensitizing individuals to environmental challenges, and strengthening institutional capacities. People who are not part of the official education system benefit from non-formal environmental education. All people should be informed about the environment. Environmental information dissemination to all stakeholders remains a difficulty. The general public is empowered to create a strong sense of responsibility for environmental issues when they are fully informed of them[71].

2.1.7 Environmental Disclosure

Environmental Disclosure is a type of environmental information owned by a corporation that is disclosed in the firm's annual financial report, with the existence or absence of annual report disclosures depending on company policy. The Association of Chartered and Certified Accountants (ACCA) defined environmental disclosures as a combination of narratives, objectives, explanations, and numerical data, including the level of pollution, resources ingested for a particular accounting period, and the impact of a company on the environment. Companies that make environmental disclosures are government parties that can know and also anticipate environmental damage by reading the disclosure of a company's environment and have the benefit of facilitating the community in having environmental awareness in choosing a product from an organization that cares for the environment[72]. The influence of a company's environment can be seen from the characteristics or views of the categories of company. Characteristics are profitability, company asset growing rate and environmental performance as moderating variables. The features of an organization have greatly increased

environmental impact and will require high fulfillment of an environmental responsibility. Environmental Disclosure is a type of corporate responsibility to stakeholders that relates environmental disclosure activities carried out by the organization previously, now, and future, and also the environmental management decisions that result from those decisions. For well over a decade, both industrialized and developing economies have included environmental reporting in their business reporting. However, given that firms' levels of awareness and attitudes toward corporate environmental disclosure vary and that nations are at different stages of economic growth, the breadth of its disclosure may not be universally applicable to all of them. Environmental disclosure of an organization is not yet required for each company, but the manager in an agency or in the organization management will always try to disclose information about the company's environmental management which will be disclosed by the company. As a result, when an organization's environmental disclosure occurs, it will provide value to the organization in the future[73].

One way of making use of the environmental data is by the method of disclosure. By so doing, users of the material would gain a better grasp of the company's environmental stance and how it specifically deals with environmental concerns. Environmental disclosure is the procedure through which a company or organization gives information to a variety of stakeholders regarding its environmental activities. It's also characterized as determining the financial impact of environmental issues on a company's financial performance, as well as requiring adjustments to the way the company discloses environmental challenges in their annual/financial reports[74].

The aim of environmental reporting is to fulfill accountability and transparency purposes while providing useful information for timely and appropriate decision making by interested parties. Moreover, environmental reports are ways where in the company communicate information to fulfill the financial markets requirement. Environmental disclosure is critical

information about a company's ethically conducted actions throughout the globalization era. This is because of the increased media coverage of global warming and climate change, along with national calamities caused by natural disasters or corporate carelessness. These symptoms encourage increased focus on long-term sustainable development and raise questions about transparency of disclosure and role of accounting information in generating financial information relevant and reliable. This phenomenon is a critical problem that remains to be thought the solution by all involved, including accounting disciplines. Accounting is used to account for economic development while also considering environmental consequences, including how to present environmental accounting information on environmental influence. Environmental cost management is a key priority and area of interest, there are various causes for this; at least two of them[75]. First, restrictions have tightened dramatically in several countries, and are projected to tighten more. Penalties and large fines are frequently included in regulations and legislation, offering a strong incentive to comply. Furthermore, compliance costs can be rather high. As a result, the organization should choose the most cost-effective strategy to achieve its primary goal. To meet this goal, compliance cost should be measured, and main causes must be recognized.

Second, successful conclusion of environmental issues becomes increasingly competitive issue. Internal system refers to organizational process that designed to enhance environmental performance, including environmental audit program, vision, and mission statement of environment, dealing with stakeholders, offer incentive compensation to managers and employee's environment, as well as providing staff for environmental activities. Voluntary disclosures allow companies to compete with one another since each company (management) gives information that investors find appealing. As a result, environmental disclosure is designed to enhance the usefulness of information based on management's assessment for the company to offer positive news. The company's reputation is probably going to because of

the disclosure, and this, in turn, will increase shareholder value. Information about the organization's actions and how it deals with social and environmental issues is included in the disclosure of social and environmental accounting information[76].The disclosure also reveals how businesses interact with their communities, employee issues, community involvement, and the extent of the company's desires in the environmental and other ethical, social, and environmental concerns[77]. In other sense, social and environmental disclosures provide additional information about the social aspect of financial systems in organizations[78]. Consequently, they also help to improve the image of organizations in the communities in which they operate by reporting on their responsibilities and effects on social and environmental issues. Environmental disclosure includes information pertaining to a company's attitude toward its environmental effects, emissions, pollution, contamination, cleanup (after pollution), re-landscaping, and energy efficiency and effective use (that was not intended as an explicit economic message).

The term "social and environmental disclosures" refers to information related to company's policies, attitudes or actions toward environmental impact, emissions, pollution, cleaning, planting, or energy efficiency. It is a disclosure that is generated by environment accounting system which is among the overall environmental information that is disclosed by company[79]. Social and environmental disclosures is described as corporate social responsibility reports, eco-reports, and corporate accountability reports[80,81]. However, disclosure of social and environmental activities of corporate entities may be either mandatory or voluntary, depending upon whether the type and degree of information required to be disclosed is governed by the stipulated regulations and standards or showcasing the contributions of the corporate entities' contribution to its environment[82]. In the aspect of mandatory disclosure practices, regulations have already been adopted in several nations arising to in a predictable increase in disclosure levels in the affected countries[83].

In terms of environmental disclosures in Nigeria, majority of businesses disclose some aspect of their environmental reporting as part of their annual reports, however these reports are typically brief and don't adhere to any particular standards or guidelines. The diversity in reporting content and format is due to the fact that environmental disclosure is still heavily reliant on voluntary initiatives by reporting entities. Sixty percent of the studied sectors include environmental disclosure in their annual reports. The degree and scope of environmental information disclosure is anticipated to rise in Nigeria as a result of increased international pressure for environmental information reporting and disclosure in annual reports. Different countries have different environmental regulations to support the concern for environmental disclosures. In line with this trend, The National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007 is one of many environmental laws that the Nigerian government has established. Additionally, every state in Nigeria, as well as the local governments within each state, has passed numerous other environmental laws based on the control of hazardous contamination, such as the law regarding waste disposal, the law prohibiting bush burning, and recurring environmental sanitation activities[84].

2.1.8 Environmental Law and Regulation

Environmental laws are established to handle the threatening environmental problems which emanate from human practices in the quest for economic growth and development[84]. Environmental regulation is necessary because it improves people's health and living conditions[85].

Before Nigeria's independence by her colonial master the United Kingdom, Nigeria implemented environmental-related Acts and Decrees in several contexts. Because there was no completely constituted agency to coordinate and fulfill environmental-related obligations, these laws were dispersed and uncoordinated. To prevent odor and noise pollution against neighborhoods, the Criminal Code Act and the Noxious Act were enacted in the 1950s. Later,

the Public Health Acts were enacted with the intention of reducing the spread of dangerous infectious diseases by prohibiting the indiscriminate discharge of garbage into the surrounding environment, particularly water bodies. Some Acts, such as the Water Courses Act of 1969 and the Refining Act of 1974, were implemented in the late 1960s and early 1970s to regulate oil contamination of land and navigable waters, and also fishing practices. There were also some additional environmental laws and acts enacted by the government. To name a few, there is the Mineral Act of 1969, 1973, and 1984, the oil in navigation water Decree of 1968, the accompanying Gas injection Act of 1969, and the Chad Basin Development Act of 1973. These laws and acts were enacted regarding to explicit and well-defined environmental issues. They had a limited scope and were spatially constrained[85].

The then Nigerian constitution of 1979 emphasized the significance of environmental hygiene, cleanliness, and refuge management, with local government councils were being tasked with overseeing the tasks. This government enacted legislation aimed at environmental planning and beautification of the neighborhood environment. However, prior to the founding of the environmental institution, many sectors or ministries in Nigeria enacted laws aimed at environmental conservation and protection[86].

The Fourth National Development Plan (1981-1985) was the first official document to mention environmental concerns and mitigation. The public and private sectors were recommended in this report to create environmental impact assessments (EIAs) for their projects and to obtain environmental assessment equipment.

The Nigerian constitution, which governs the country's actions, emphasizes the importance to preserve and safeguard the environment and includes provisions for this in pertinent portions of the constitution, such as:

Section 20 establishes a goal for the Nigerian government to develop and protect the air, land, water, forest, and wildlife of Nigeria.

Section 12 specifies, however implicitly, that international treaties signed by the National Assembly (including environmental accords) should be implemented as law in Nigeria.

Furthermore, the National Environmental Standards and Regulation Enforcement Agency (NESREA) Act of 2007, which incorporated the Federal Environmental Protection Agency (FEPA) Act (now Ministry of Environment), is a collection of laws and regulations aimed at safeguarding and sustaining the growth of the environment and its natural resources.

The regulation offers the authority needed to promote compliance with domestic and international environmental regulations, such as environmental sanitation and pollution prevention and control through inspection and regulating procedures.

The Agency has the authority to issue and evaluate legislation on water and air quality, waste restrictions, control of environmentally dangerous substances, and other forms of environmental contamination and sanitation under section 8 (1) of the act. Sections 4 and 5 of the National Environment Standards and Regulation Enforcement Agency (NESREA) require industries to report incidents of discharges and provide a detailed list of chemicals used in production to the agency[87].

Despite the legal support and financing, the National Environment Standards and Regulation Enforcement Agency (NESREA) get to enjoy from the federal government and had little success in meeting its stated aims and purposes. It's because environmental deterioration is worsening at a faster rate than it was before the National Environment Standards and Regulation Enforcement Agency (NESREA) was established[88]. The difficulty of creating best practices that would ensure effective and efficient enforcement and compliance with international and municipal environmental regulations is at the root of the regulatory failure[89].

Despite the emergence of the above law and regulations, there is really no environmental accounting guideline for organizations in Nigeria, and environmental accounting and reporting issues are entirely voluntary. The extent of environmental cost accounting of Oil

and gas companies is still far from acceptable or compliant with international standard practices.

2.1.9 Environmental Taxes

Taxes take different forms, but generally, it is measures taken by imposing taxes on environmentally damaging activities or credit products or services that are beneficial to the environment[90]. It stated further that all form of tax systems, income tax, excise tax and property tax can incorporate environmental tax measures at all tiers of government, local, state and federal. An environmental tax is a tax that is imposed for the intention of the environment that is the tax that is meant to provide incentives for the reduction of particular emissions or taxes on environmentally harmful products[91]. She went on to say that the primary goals of environmental taxes are to alleviate the burden of environmental issues and to protect the environment The idea of using taxation as a corrective measure for negative externalities is linked to Pigou in 1920[92].

This concept he further stated is founded on the basis that negative externality is created when the production or consumption of some goods cause damage to someone except the seller or buyer of such goods or substances and this is viewed as an element of market failure because their action failed to incorporate external cost into their decision making and enforcing a tax on such externality generating product is a criterion of correcting the externality[92]. Environmental taxes take three different forms that is, it serves as fees or taxes used to generate revenues for environmental cleanup; leads to changes in behavior, consequently, leads to pollution conservation and serve as measures to reduce consumption. The practical aspect of enforcing a theoretical ideal tax isn't simple because it is rather very difficult to estimate marginal damages, especially in situation where the danger is expected happen any time soon, as seen in the situation of greenhouse gas emissions or with variability in the damage experience distance time, as seen in the case of local air pollutants. In many

situations, measuring emissions and imposing the actual taxes is a difficult task to perform by the taxing authorities which then necessitated the imposition of a tax on an indicator for emissions, such as the quantity of fuel burnt. The taxing authority resolved to choose a proxy that is very close to what matters for marginal damage particularly when it is impracticable to tax emission directly[93].

There are alternative policies that are utilized to minimize environmental pollution apart from taxes. This includes marketing licenses, technology or emission requirements, and incentives for adopting less polluting alternatives. The best policy to function without waste makes available modalities for reducing emissions and simultaneously gives the market flexibility across various methods of reduction in emissions for a particular emitter and across different emission generators[86].

It has been revealed that several environmental taxes are widespread use across the world among which are taxes and charges for forest or logging concessions, gas flaring, environmental assessment, environmental pollution and levies for environmental improvement while in Nigeria, environmental taxes include petroleum tax, cattle tax, penalties for gas flaring, road tax and agricultural tax[92].

The Organization for Economic Co-operation and Development (OECD) structured a design for environmental taxes to take the form:

a) The scope should be as broad as the scope of the damage.

b) Environmental principles must be enforced on the pollutant or contaminating behavior with few exceptions if any.

c) The value ought to be in equal proportion to the damage.

d) It should be reliable, and its value predetermined to motivate environmental improvements.

e) The distributional impact should be addressed by means of other policy mechanisms

f) The revenues from environmental taxes can help fiscal consolidation or reduction of other taxes.

g) It should be clearly communicated to the public in general.

h) Its combination with other policy instruments maybe required to forestall certain issues.

i) There is the necessity to assess competitiveness, coordination, and transitional relief.

There is a present tendency toward the establishment of carbon tax, that is the tax meant to handle carbon dioxide emitted majorly through burning of fossil fuels[93]. The advocates for tax see it as the relevant tax for establishing a stable price for emissions which is important and needed by organizations involved in long-term decisions concerning investment and advancement in low emission technologies.

It is made known that Nigeria has peculiarities concerning its tax system implementation as it operates a "slow ramp-up" system whereby tax is gradually introduced over time from low initial rate and then increasing it at a pre-announced schedule to accomplish the desired system[94].There is additionally failure of enforcement in the country. It was stated in one of the Nigerian Extractive Industries Transparency Initiative articles published that the capacity of gas produced was not made available before flaring, as the Figures made available were computed by the corporations and forwarded to the Department of Petroleum Resources (DPR) after the gas has been flared. This showed serious lapses in the control and monitoring mechanisms put into place by the DPR whose duty is to see to it that these companies make available accurate and durable information. He further identified that there have been inadequacies in the statutory guidance for greenhouse gas reporting in Nigeria. This, therefore, pointed to the urgent demand for a statutory guidance for mandatorily reporting emissions for the effective accomplishment of the carbon tax system as it should be backed by robust enforcement for effectiveness and transparency[94].

2.1.10 Overview of Nigeria's Oil and Gas Industry

Nigeria's oil and gas industries have been thriving ever since the Shell Group discovered crude oil there in 1956. However, until the early 1990s, when Nigerian businesses started to enter the market, the sector was largely controlled by multinational corporations. The implementation of the Nigerian Content Directives issued by the Nigerian National Petroleum Corporation (NNPC) about ten years ago, and ultimately, the effective implementation of the Nigerian Oil and Gas Industry Content Development (NOGIC) Act (The Act) in 2010 both helped to increase local participation. The Act aims to encourage the selection of Nigerian firms and resources for oil-related projects, contracts, and licenses. The industry can be generally divided into two sectors based on structure: upstream and downstream. The upstream sector is distinguished by crude oil and gas exploration and production (petroleum operations).

The Federal Government (FG) receives about 80% of its income from the upstream oil industry, which accounts for over 90% of Nigeria's exports and the majority of its economic output. On the other hand, the downstream sector consists of transmission and conveyance, which involves moving oil and gas to refineries and gas stations. The refinery or plant is connected to the wellhead by a pipeline network. Additionally, tankers and specially designed vessels are employed for this purpose and refining, which entails converting crude oil into products such as diesel, PMS, kerosene, etc. The marketing and distribution of refined petroleum products, as well as other ancillary activities, are also included. Additionally, distribution includes the movement of refined petroleum products from the refineries to the storage/sale depots via pipelines, coastal vessels, trucks, rail cars, etc.

Most companies in the oil and gas sector do not comply with the listing rules' requirements to disclose or report on their environmental footprints, which makes the business environment unstable and unfavorable for businesses to thrive as these companies are seen as being

unfriendly to the environment, which hurts their ability to project a positive image and hurts their financial performance.

2.1.11 Concept of Financial Performance

The natures of business operated by organizations such as legal, political, and environmental regulation influence their performance i.e., profitability[95].In a broader sense, financial performance alludes to the extent to which financial goals have been implemented. It assesses a company's financial health and the outcomes of its policies and regulations in monetary terms over time. It could be used to make comparisons of businesses in the same industry, industries or sectors[96]. Additionally, financial performance is a subjective measure of how successfully a company can employ assets from its core mode of operation to generate revenues[97]. This concept is also used as a broad indicator of a company's financial health over time, and it can be utilized to contrast companies across industries. Financial performance is viewed as an appraisal of a company's profitability and financial strength of any business concern[98].This is used to measure in monetary terms, the outcome of a company's procedures and actions, these outcomes are evidenced in the company's return on investment, assets, and so on[99].

Furthermore, financial Performance also involves the evaluation of a company's policies, activities, and operational results in financial terms. These outcomes are evidenced in the firms return on investment, assets, equity, capital employed and profitability[100]. It is a general measure of how good a firm uses its resources to generate profits and it was measured using accounting measures of profitability[101]. It is the technique of evaluating the financial results of a company's policies and operations in financial terms. Financial performance is utilized to assess a company's overall health over time, and to also compare companies in the same or other industries and sectors[102]. Firm performance is a measure of a company's efficiency that

is influenced not only by the company's efficiency but also by the industry in which it operates.

In the finance sector, financial performance is assessed to give the account of stewardship by the management team to the shareholders. The key aspect of this involves measuring the company's profitability, current value, and growth prospects. Financial performance is frequently used as a measure of a company's financial health over time. The performance of a company can be achieved in various and different ways including profitability, market share growth, return on investment, return on equity and liquidity[103].The major significant of financial reporting is to offer users with valuable information of financial statement that are necessary in making intelligent decisions. Also, provision of high-quality information is required for the effective functioning of capital market and to both public and non-public companies' access to finance A solid financial report has both improving A solid financial report has both improving and fundamental qualitative attributes of financial data (compatibility, Timeliness, Verifiability, Relevance, understandability, and Faithful Representation). Financial performance aims to inform relevant parties and therefore encourage them to make choices, which is a financial case for the company that involves the collection and utilization of cash and demonstrates the company's capability to handle and manage its resources. Analyzing financial ratios during a specific time is the best way to evaluate the financial performance of companies[104,105].

The complete achievement of a corporation in relation to profits, sales, and growth measured on a financial basis is regarded as financial performance. It's a crucial factor in a company's success and growth[106]. Financial performance proof the capability of profits generated in a specific time frame normally measured on yearly basis by comparing the performance done by the company with those of previous years and those of one or more other companies in the same firm.

Return on Assets (ROA), Return on Capital Employed (ROCE), Return on Equity (ROE), Earnings per Share (EPS), and others are forms of financial performance indicators or measurements. Most of these financial performance measures are computed using relevant ratios such like profitability ratio, efficiency ratio, and investor or shareholder ratios. For an accounting period, return on assets (ROA) is computed by dividing total profits by total assets. This ratio assesses a company's potential to generate profits through the effective use of all its total assets. It shows how effectively a company's assets are put to work to generate profits[107]. A higher ROA indicates that the company's resources are being utilized efficiently, and vice versa.

Return on Equity (ROE) is a measurement by how much profit a firm earned in comparison to the total amount of shareholders' equity reported on the statement of financial position for a period. It is a gauge of return for their investment. A business with a high return on equity is capable to generate cash internally, either through earnings retention or through other sources[108]. A higher return on equity (ROE) shows that the firm's financial performance and rate of return on the money invested by its shareholders has improved.

Return on Capital Employed (ROCE) is computed as operating profits divided by the total assets less current liabilities of a company for a certain timeframe. The profits recognized in determining the Return on Capital Employed (ROCE) are after deducting the company's operating expenses in the way of distribution costs, administrative expenses, and some other related expenses for the accounting period. Also, sometimes, an absolute sales or turnover figure is considered as a gauge of evaluating financial performance. However, it has been argued that the variable is not a good measure of assessment because of ease of manipulation and seasonal variations[109].

2.1.11.1 Internal Variables That Influence Financial Performance

The internal variable that influences the financial performance of an organization are capital structure, liquidity, revenue growth, size of firm, profit margin and tangibility. They are hereby discussed:

Capital Structure: An entity's capital structure is a necessary variable for the existence, growth, and sustainability overtime. he capital structure of a business is the overall combination of financial sources utilized to fund its operations, which consists of retained earnings (Reserves), equity and debt finance[110].

Capital structure policies and strategies have a substantial influence on the entities' capacity to thrive in the competitive business environment, generate profits and returns[111,112]. It includes all of shareholders' fund and debts (both current and non-current) and decides the returns to funds providers.

Liquidity: An entity's liquidity reflects the extent to which current liabilities due for settlement between one financial year can be settled from the company total current assets without affecting the operating processes of the company[101.] From a company's liquidity, three ratios can practically be calculated: cash ratio, current ratio, and quick or acid test ratio. Organization liquidity indicates the company's short-term solvency and, if effectively managed, must have a beneficial impact on its financial performance.

Company Size: The total assets of an organization are measured by its size[101]. The total assets comprise of current and non-current assets, intangible and fictitious assets[105].There are the resources managed by an entity and used in generating income. A company is a going concern and remains in business if it continues to reinvest and obtain new assets for the goal of continued existence[113].

Sales Revenue Growth: Sales growth signifies an increase in revenue resulting from product sales over a specific time period[114]. Sales growth is estimated utilizing the sales growth ratio to calculate how quickly an organization's revenue is growing. When sales decrease, the

result is a negative growth rate. It portrays the rate of increase in a company's operating revenue over the prior period. The ratio is projected to be increasing from year to year and should impact positively on financial success of the organization.

Profit Margin: One of the profitability ratios that is utilized to evaluate the correlation between profit after tax (PAT) and revenue over time is profit margin. The greater the ratio, the better an entity's financial performance[115]. This is because, from the Du-point formula for determining Returns on Assets (ROA), profit margin is one of the components used (ROA= Net income/revenue X Revenue/ asset). Profit margin is determined as profit after tax divided by revenue of an entity. There is thus a direct correlation between profit margin and entity's financial performance.

Tangibility: This is dealing with the total non-current assets of an entity. Tangible assets are referred to as Property, Plant and Equipment (PPE) of an entity. They are assets acquired for use in the operation of an organization other than for sale and constitute the principal components of income generation and therefore, can influence the financial performance of an entity[108].Tangibility is calculated as PPE divided by total assets. Investments in non-current assets are a key strategic management decision and because of technology advancements, company management will constantly evaluate the appropriate timing for acquisition and disposal of non-current assets so that operations are not drastically affected, and profitability and financial performance negatively impacted.

2.1.11.2 External Variables that Influence Financial Performance

Inflation and the Gross Domestic Product (GDP) are some of the external variables that influence a company's financial performance. They are discussed thus;

Inflation: The principle of inflation characterized as a persevering increase in the overall price level of goods and services in a country throughout an extensive period of time[116]. Inflation is inextricably tied to the availability of money in an economy, and it is defined as a

continual rise in the price of goods and services over a more extended time frame rather than a limited duration of time. It is estimated as the percentage rate change in the consumer price index (CPI). It represents the living standards, and is, therefore, more approximate for assessing the welfare of the people. Inflation throughout an economy can have a detrimental impact on a company's financial performance because the resource utilize are obtained from the external environment which takes into account the country's economic status of the at a specific period of time[101].

Gross Domestic Product (GDP): This is a commonly used measure of economic development, and it is described as a rise in economic performance indicators of any country at a specific period. It is the complete market worth of all commodities and services manufactured in a for a specific time period[117]. When the economy grows, it is anticipated that company's financial performance should also improve.

2.1.12 Environmental Accounting Disclosures and Financial Performance

Environmental accounting disclosure data can be simply obtained from companies' annual reports. Environmental disclosure can influence financial performance of companies either positively or negatively.

Disclosing information about a company's environmental practices can help the company's reputation and consequently, help to enhance its financial performance[90]. It is also view that disclosing environmental information has no substantial influence on financial performance of firms[118]. Environmental accounting disclosure has a substantial and positive correlation with a company's financial performance[119]. The impact of environmental accounting disclosure on the financial performance of organizations in Nigeria has been studied, and the findings show that environmental accounting disclosure has no positive influence on corporate financial performance in Nigeria[120]. The correlation between financial performance and the extensiveness of environmental accounting reporting disclosure in annual reports is

been analyzed and the study disclosed that there is a significant positive correlation between company profitability and environmental accounting reporting[121].The effect of environmental disclosure and corporate social responsibility accounting on the financial performance of Nigerian firms was investigated, and the findings revealed that environmental accounting disclosure has no significant effect on financial performance[122].The Nairobi Securities Exchange in Kenya assesses the impact of environmental disclosure on listed companies' financial performance. Environmental disclosure has a positive significant impact on financial performance, according to the study[123]. The impact of environmental accounting disclosure on manufacturing company financial performance is investigated, and the results show that environmental accounting disclosure has a significant impact on manufacturing company financial performance[124].

Also examined is the impact of environmental accounting and reporting performance, with the study finding that environmental disclosure has a significant relationship with firm profitability[52]. It was also established that businesses that strive to reduce their negative environmental impact can benefit from new business opportunities[125]. For example, a company that actively promotes environmental stewardship has a greater chance of success and attracting new customers from the ranks of environmentally conscious consumers, thereby improving financial performance. According to the findings of a study, the disclosure of environmental information improved the financial performance of the organization[126]. It was also discovered that environmental accounting disclosure improves a company's financial performance by increasing the confidence of potential investors and creditors by consequently improving the company's image[127].

2.1.13 Environmental Accounting Disclosure and Return on Asset (ROA)

Accounting measures can be used to calculate financial performance. Part of the profitability ratios used to assess financial performance is return on asset (ROA). This has been utilized by researchers to evaluate organizations financial performance.

According to a study on environmental accounting disclosure and financial performance of Nigerian food and beverage companies, it revealed that there is a significant correlation between environmental accounting disclosure and return on assets[128].

2.1.14 Environmental Accounting Disclosure and Return on Equity (ROE)

Profitability is one approach to estimate a company's profitability and return on equity (ROE) is one of the methods of measuring profitability of a company. Companies quoted on the Indonesian Stock Exchange were used to investigate the impact of environmental accounting disclosure on financial performance. The findings revealed that Environmental performance has a significant impact on return on equity (ROE)[129]. It was investigated if there is any significant relationship between environmental accounting disclosure and financial performance in Nigeria, the findings revealed that environmental accounting and return on equity have a significant negative relationship[130]. The impact of environmental and social costs on the performance of Nigerian manufacturing companies was investigated, and the findings revealed that environmental and social costs have a significant impact on manufacturing companies' return on equity[131]. The correlation between environmental accounting disclosures and return on equity of food and beverage companies in Nigeria was investigated and the findings showed that there is a significant correlation between environmental accounting disclosures and return on equity[124].

2.1.15 Environmental Accounting Disclosure and Profit after Tax

One of the ratios that can be used to measure financial performance through profitability is profit after tax. A study of environmental accounting disclosure and financial performance of Nigerian food and beverage companies found no significant relationship between

environmental accounting disclosure and profit after tax[124]. It was also documented that there is a significant positive effect between environmental disclosure and profit margin[132].

2.2 Theoretical Review

The theoretical review serves as a mirror through which the issue under investigation in this study can be better understood.

2.2.1 Legitimacy Theory

The legitimacy theory was evolved from the definition of organizational legitimacy, which is described as a theory that postulates that organizations consistently strive to make sure that they function within the constraints and standards of their respective societies[133]. According to this theory, it is essential to fulfil the societal norms and expectations to guarantee the existence of firm in long-term[134]. Proponents of the legitimacy theory opine that corporate social and environmental responsibility minimizes the chances of regulatory action and stakeholder bans while also strengthening the firm's permission to operate. The legitimacy theory holds that organizations are bound by the social contract in which the firm commits to execute various socially desired behaviors in exchange for acceptance of its objectives and rewards, and this ultimately guarantee its existence. For the environment to continue to exist and perform its own roles (approval, resources, growth etc.) to the organization, the organization has to perform its own side of the contract by incurring reasonable costs towards sustaining the environment.

An organization that adopts legitimacy theory perspective will voluntarily report on company's operations as it affects the community in which it operates[135].The most commonly used theory to explain environmental disclosure is the legitimacy theory. It clearly indicates that environmental disclosure is a component of how much societal and political pressure a company is under to improve its environmental performance. To respond to this strain, firms try to provide more environmental information. From the legitimacy theory perspective, firms

voluntarily disclose environmental information to demonstrate that they comply with the expectations and values of the society in which they operate. It implies that social expectation does not just depend upon generation of profit but has broadened to include wellbeing and security of employees and local communities as well as concern for the natural environment. Firms need to disclose voluntary environmental information to fulfill the broad demand of the society relating to employee welfare, community and natural environment. The theory holds that a company is more probable to survive if it obtains legitimate and social support from either external constituents of its institutional environment or if it behaves or appears to behave in the same manner to other comparable organizations within its institutional environment[136,137].

2.2.2 Stakeholder Theory

There are wide range of stakeholders who benefit economically from the production and economic environment. They have demanded and used natural resources from the environment. In return, the outfits should treat and manage the environment very well so that the resources are not depleted. The fundamental assertion of the stakeholders' theory is that a firm's success is contingent on the successful management of all of a firm's connections with its stakeholders, a term coined by Stanford Research Institute (SRI) to allude to those groups without whose support an organization would cease to exist[138]. According to Freeman's stakeholder's theory, managers must achieve a diverse variety of constituent elements (for example, employees, customers, suppliers, the local community, and so on) who can impact the business's outcomes. Also, according to the viewpoint, it is insufficient for managers to primarily place more emphasis on the requirement of stockholders or business owners. This means that it may be advantageous for the organization to engage in certain environmental activities that non-financial stakeholders regard as essential, because if not, these groups may withdraw their support for the business.

Freeman segregates the concept of stakeholders into two categories when developing the stakeholder theory:

(i) A business policy and planning model, and

(ii) A stakeholder management model based on corporate social responsibility.

The first model states that, Stakeholder analysis aims at developing and evaluating the acceptability of corporate strategy decisions by groups whose support is crucial for the firm's continued survival. The owners, customers, public groups, and suppliers are all identified as stakeholders in this model. Even though these groups are not antagonistic in nature, their potentially conflicting behavior is a constant in management's strategy development to best match their firm's resources to the environment[139]. Owners, customers, public groups, and suppliers are among the stakeholders identified in this model. Although these groups are not adversarial in nature, their potentially conflicting behavior is viewed as a constant in management's strategy to best match their firm's resources with the environment. The second model broadens corporate planning and analysis to include external influences that could be adversarial to the company. Regulatory environmentalists and/or special interest groups concerned with social issues are examples of adversarial groups[140]. Also, the second model allows managers and accountants to recommend a strategic plan that is adaptable to changes in non-traditional stakeholders' social demands. In order to adjust to changing social demands, the stakeholders' theory proposed an extremely high level of environmental awareness, which necessitates companies expanding their corporate strategy to include non-traditional stakeholders such as regulatory adversarial groups[141]. The stakeholders' theory in environmental accounting is focused primarily on environmental cost elements and valuation, as well as their inclusion in financial statements.

This study is focused on the stakeholders' theory, with the goal of encouraging organization managers to pursue environmental practices that non-financial stakeholders value greatly in

order to maximize stakeholder value while minimizing environmental costs. Stakeholders are a body of individuals who an organization cannot operate without recognizing and exceeding their expectations. Oil and Gas companies in Nigeria should adapt to changing social demands of these individuals.

2.3 Review of Empirical Studies

Environmental accounting disclosure has been the subject of discussion and research over the years among academic scholars and accounting practitioners. Over the last few decades, numerous qualitative and quantitative studies have investigated the environmental accounting disclosure and financial performance of oil and gas firm in various countries and sectors, yielding mixed, inconsistent, and often contradictory results ranging from positive to negative, no relationship, and even statistically insignificant relationships. The following are some of the empirical findings from these studies:

A study analyzes the effect of environmental disclosure on the environmental performance of China's listed mining companies. The review investigation utilized China's Environmental Information Disclosure Degree (EIDD) and the Chinese Securities Regulatory Commission's disclosure rules to recommend the Environmental Information Disclosure Index. The study utilized a modified version of a current environmental disclosure index for environmental performance analysis. The review employed a reliability and robustness test. The co integration estimation analysis used panel data from the Shanghai and Shenzhen Stock Exchanges for thirty-four (34) mining companies from 2000 to 2018 to reveal a positive and substantial association between company's environmental performance and environmental information disclosure at 1% level. According to the trend analysis, mining companies in China conform with environmental information disclosure. This can be seen in the significant improvement in mining company environmental disclosure between 2008 and 2010, after the incorporation of the Environmental Information Disclosure Degree (EIDD)[142].

Another study focused on the impact of environmental disclosure practices on Sri Lankan firm performance. This research is based on secondary data which was gathered from annual published reports of listed companies in the Colombo Stock Exchange (CSE). Data was gathered from a sample size of fifty (50) companies listed under five industries over four consecutive fiscal years, from 2015 to 2018. When assessing the degree of environmental disclosures, the content analysis technique was used. The Environmental Disclosure Index (EDI) was created using the 2019 Global Reporting Initiative (GRI) Standards. The research found a strong positive relationship between environmental disclosures and firm financial performance. There is, however, no statistically significant relationship between environmental disclosures and firm market performance[143].

A Malaysian study assesses the relationship between environmental disclosure and financial performance in Malaysian, Singaporean, and Thai companies that voluntarily disclose environmental information in their financial reports. A total of two hundred and fifty (250) companies from the Bursa Malaysia, Singapore Stock Exchange, and Thailand Stock Exchange were investigated. Of the 250 companies examined, fifty -six (56) from Malaysian companies, thirty-seven (37) from Thai companies, and fifteen (15) from Singapore companies were recognized as environmental reporting companies and were entailed in the study's sample. According to the study, high-performing companies are much more likely to have detailed environmental disclosure (i.e., one paragraph or more). The findings, on the other hand, recommend that the company's performance is unrelated to the production of detailed or superficial environmental disclosure[144].

Another Indonesian study looks into the quality and scope of environmental disclosure (ED) in environmentally sensitive manufacturing firms. Secondary data was obtained from published annual reports of listed companies on the Indonesian Stock Exchange (ISE) for this study. They research the influence of media attention, environmental awards, and financial

performance on the quality of environmental disclosure, and also how the extent to which the execution of corporate governance (CG) principles can mitigate these factors. During the period 2012–2016, 135 manufacturing companies quoted on the Indonesian Stock Exchange were utilized in the study. The research hypothesis was tested using partial least squares–structural equation modeling (PLS-SEM).The results showed that media attention and environmental awards can improve the quality of environmental disclosure, and that the relationship will grow if the company adheres to corporate governance (CG) principles[145].

Furthermore, a study looked at the effects of environmental accounting disclosure on the firm value of listed industrial goods companies in Nigeria from 2007 to 2016.This study used an ex-post facto research design, with data collected from individual sample company annual financial statements. The effect of environmental accounting disclosure on firm value was examined using multiple regression. Non-financial indicators, financial indicators, and performance indicators were utilized to evaluate the environmental accounting disclosure, while Tobin's Q was utilized to measure the firm value. From the result, it clearly indicates that non-financial indicators have a positive significant effect on firm value, whereas performance indicators have a negative significant effect on firm value, and financial indicators have no significant effect on firm value of Nigeria industrial goods companies. It was concluded that the information content requirement imposed by stakeholders' aids in the disclosure of information about organizational financial performance and environmental accounting reports. As a result, corporate entities must improve their environmental responsibility practices and disclose their environmental risks, liabilities, and impacts in a comprehensive manner. The study recommended that sanctions be implemented to encourage disclosures, particularly non-financial indicators, because they have a direct impact on the firm value of Nigeria industrial goods companies[146].

Conversely, another study investigated the Environmental Accounting and Financial Performance of Nigerian Oil and Gas Companies. The study used secondary data for the years 2015, 2016 and 2017, with a total of eleven (11) companies being sampled based on environmental information available in the annual reports. Multiple regression analysis with an econometric model was utilized to evaluate the data. The total amount spent by each oil firm on environmental costs (air pollution, water pollution, employee welfare (medical expenses), community welfare, and externalities) served as indicators for environmental accounting reporting, whereas ROCE, NPM, DPS, and EPS served as indicators for corporate performance. The result indicates that the explanatory variables, ROCE, NPM, EPS, and DPS exhibit an insignificant correlation with ENVC with coefficients of .252, .011,.152 and .114 and P-values of .175, .950, .423 and .542 respectively. The 30.6% Adjusted R2 indicates the variation in ENVC margin and could be explained by variability in explanatory variables and control variables in the model. Durbin Watson value of 1.683 confirmed that there is no first-order autocorrelation among the residuals in the model[147].

A study in the same vein analyzed the relationship between corporate sustainability disclosure and return on investment. The study's sample comprises of ten (10) Johannesburg Stock Exchange (JSE)-listed mining companies, and data were gathered from sustainability reports for a (5) five-year period from 2010 to 2014. In this context, data was collected through the use of a content analysis approach. The correlation between environmental disclosure and return on investment was investigated using a multi-regression approach. The same statistical mechanism was utilized to figure out the association involving social disclosure and return on investment. The findings discovered that environmental disclosure has a negative relationship with return on investment. The study, on the other hand, revealed a positive relationship between social disclosure and return on investment. In conclusion, this implied that an increase in corporate reporting of social issues results in heightened financial

performance through an increase in return on investment. The study recommended the incorporation of corporate social disclosure because it would inspire companies to be socially conscious while also providing financial benefits.[148].

A related study analyzed environmental cost disclosure and oil and gas financial performance in Nigeria. This study empirically analyzes the impact of environmental cost disclosure and financial performance measures on listed oil and gas firms in Nigeria. Time series data were obtained from the Central Bank of Nigeria annual financial reporting and economic review; the statistical package for social sciences (SPSS) version 22 was utilized to perform Pearson product moment coefficient of correlation and multiple linear regression analysis. The econometric results reviewed adequate disclosure on environmental cost, compliance to corporate environmental regulations have positive significant impact on financial performance measures. As a result, the research recommended regulatory enforcement for adequate environmental cost disclosure and proper reporting. To ensure a conflict-free corporate environment and increased corporate performance, Nigerian oil and gas businesses should build a well-articulated environmental costing system[95].

A study investigate the correlation between environmental accounting disclosures of selected manufacturing firms and financial performance using return on asset (ROA), earnings per share (EPS) and net profit margin (NPM) as proxies for financial performance. The study used a correlation research design, and time series data were obtained from the annual reports of 40 randomly selected listed manufacturing firms and the data were analyzed using SPSS version 23 and point bi-serial correlation analytical tool. The findings indicated that there is significant and positive relationship between environmental accounting disclosures and return on assets, net profit margin, earnings per share, audit firm type and firm's age. The study recommended that to ensure uniformity, consistency, and comparability of environmental information, government and standard setters should develop standard principles for the

mandatory disclosure of corporate environmental information and improve companies performance so as to allow stakeholders to be inform when this companies are environmentally responsible[149].

Another study investigates Environmental performance and environmental Disclosure: The Role of Financial Performance. The purpose of the study is to determine the impact of environmental performance, independent board of commissioners, and firm size on environmental disclosure as measured by Indonesian environmental index. The sample size of the study is made up of 117 manufacturing and coal mining companies listed on the Indonesia Stock Exchange (IDX) and data was gathered using the annual result of the companies. The data was analyzed using multiple regression analysis along with statistical hypothesis testing and the findings revealed that environmental performance and firm size had a positive impact on financial performance while, the independent board of commissioners does not significantly have impact on financial performance. Additionally, Environmental performance, firm size, and financial performance all have a positive impact on environmental disclosure while independent board of commissioners has no significant influence on environmental disclosure [150].

Another study concentrated on how environmental and social disclosure affects the financial performance of quoted oil and gas companies in Nigeria. Data set from five (5) years were collected and evaluated using the ordinary least square regression technique. The theoretical model was hinged on stakeholder and legitimacy theories which describe the tie between organizations and the social/societal strata need for disclosure and financial performance. The statistical research indicated that while disclosures on employee health and safety and community development had no meaningful influence on financial performance, disclosures on waste management have a positive and significant impact. According to the study, oil and gas companies should constantly review their waste management strategy and employ

bespoke technology in waste disposal plan to mitigate their environmental impact. Furthermore, Oil and gas companies should improve on employee health and safety as portion of their mission and vision statement for enhanced firm performance. Companies should also guarantee sustained development of their host countries to avoid hostility by stakeholder groups which has a negative effect on its operations and in turn affects performance[151].

A study also examined the correlation between cost of environmental degradation and the financial performance of oil and gas companies in Nigeria. The Ex-post facto research design was employed for the study and data were obtained from the Petroleum Resources Department (DPR) and Nigerian Stock Exchange (NSE) website between 2009 and 2018.The sample size is made up of the five listed oil and gas companies on the Nigeria stock Exchange from 2009 to 2018. The identifying proxies for the independent variables were the Cost of Environmental Impact Improvement (EPRC) and Cost of Environmental Conservation (ECC), while the defining proxies for the dependent variable were returns on equity (ROE) and asset returns (ROA). Diagnostic tests (Durbin Watson) were put through to for data validity and regression analysis was performed on descriptive variables in comparison to financial performance fluctuations. The results showed that Environmental Impact Improvement (EPRC) is negatively significant to ROE and negatively insignificant to ROA while Environmental Conservation Cost (ECC) has a positive insignificant relationship with ROE and ROA[56].

A study conducted in Pakistan investigated the correlation between environmental accounting and the performance of non-financial firms listed on the Pakistan stock exchange. The regression analysis technique was utilized in this study, which used annual data from companies from 2006 to 2016.According to the empirical findings; there is a significant positive correlation between environmental accounting and firm size, whereas earnings per

share (EPS) and return on capital employed (ROCE) were statistically insignificant. As a consequence, large corporations devote greater resources to social welfare in term of pollution prevention. The limitation to this study, on the other hand, is the small sample size of listed companies on the Pakistan stock exchange. As a result, results cannot be extrapolated to the entire population. Based on the findings, it is suggested that government must give some tax relief to those firms, which work to safeguard the environment protection and that environmental reporting should be compulsory in Pakistan to have clean homeland[152].

Also, another study looked at the impact of environmental accounting, corporate social responsibility, and corporate performance on the reputation of companies. The goal was to investigate the impact of moderating variable of corporate reputation on corporate social responsibility, environmental accounting, and business performance. For the study, data were gathered from manufacturing listed companies on the Indonesia Stock Exchange (ISE) between 2014 to 2016.The findings of regression analysis indicated that variable corporate reputation, environmental accounting, and social responsibility instantaneously influence business performance and value[153].

Similarly, another scholar conducted research on environmental management accounting, environmental strategy, and organizational performance, using data from the United Arab Emirate (UAE) markets. The aim was to examine the relationship between environmental strategy and environmental management accounting usage. The study's data were obtained from companies listed on United Arab Emirate (UAE) stock markets. Results of structural equation modeling showed that environmental has a positive effect on the level of environmental management accounting and that there is a positive relationship between environmental management accounting and organizational performance.[154].

A study is conducted on Environmental Accounting: A Tool for Conserving Biodiversity in Tropical Forests. The study aimed was to evaluate the degree of degradation and its influence

on biodiversity for accounting purposes. The research was undertaken in the forest reserves of Osun state, Nigeria. Data collected from the records of the forest management department were analyzed using Logit Regression Model (LRM), it shows that a per capital annual cost of over N2 billion loss were recorded due to depreciation of biodiversity[68].

Another investigation is conducted on how environmental reporting of manufacturing companies in Nigeria affects their operational performance. The study utilized the panel research design to determine how environmental reporting improves firm operational performance in Nigeria (proxied by return on total assets). It also utilizes Hausman test to choose the suitable model (the fixed-effect model), for the ten (10) years study, which ran from 2009 to 2018 for manufacturing sector firm operational performance and environmental disclosure. The findings discovered that environmental reporting has a positive impact on a company's operational or financial performance[155].

Also, some scholars in china carried out research on impact of environmental information disclosure on the firm value of China's listed manufacturing companies between 2006 and 2016. Predicated on the panel dataset, The Difference-in-Differences (DID) model and the Propensity Score Matching method (PSM) were utilized to evaluate whether the Environmental Information Disclosure Measure (for Trial Implementation; EIDMT) affects the firm value, and the results demonstrated that the Environmental Information Disclosure Measure for Trial Implementation (EIDMT) has a significant effect on the listed manufacturing firms Value and it has a greater impact on the firm value of non-state-owned businesses than state-owned businesses when the firm's ownership is taken into consideration. Also, utilizing Difference-in-Differences (DID) model and the Propensity Score Matching method (PSM) for western, eastern and central china it was discovered that EIDMT considerably affects firm value in eastern and western China but has minimal effect on central China[156].

Another study was carried out on oil and gas companies listed on the Nigerian Stock Exchange between 2006 and 2015 to evaluate the influence of environmental costs on firm performance. Return on asset was used as a metric of performance and the statistical analysis was carried out using regression analysis and the special package for social sciences (SPSS).The result showed that better environmental performance influences organizations positively[99].

A study investigated the effect of environmental costs on performances of quoted firms in Sub Saharan Africa. The study utilized ex-post facto research design and a random sampling technique while quantitative secondary data were gathered from sixty-four (65) extractive and industrial firms listed on the stock exchanges of four Sub-Sahara African countries, namely South Africa, Ghana, Nigeria, and Tanzania spanning from 2007-2016. The study model was measured using panel data analysis and Ordinary least square regression (OLS). The study finding demonstrated that environmental costs, which are measured by employee health and safety, waste management, and community development costs, have no significant impact on return on capital employed, earnings per share, and return on equity in the regional level or in the country-specific analyses for South Africa and Nigeria. Furthermore, the result revealed that only waste management costs have a substantial impact on return on capital employed and return on equity in Tanzania, while independent variable in Ghana showed a significant impact on both of these metrics. The study recommended that firms in the Sub Saharan Africa should emphasize on cost recognition, environmental responsibility, categorization, and disclosures in annual, integrated, and sustainability reports[157].

A study scrutinizes environmental accounting disclosures and financial performance of food and beverages companies spanning from 2006 - 2015.A sample of 14 food and beverage companies from the Nigeria stock exchange were employed. A disclosure index consisting of 20 element of information was used. The statistical techniques of multiple regression and

Pearson correlation were used, and the findings shows that there is a negative correlation between environmental accounting disclosures (EAD) and net profit margins of Nigerian food and beverage companies[158].

Conversely, a study analyzes the influence of environmental performance ratings on company stock price. The study analyzed a sample of sixty (60) companies that took part in proper between 2002 and 2012. From these companies, 246 observation samples were gathered. The result reveals that environmental performance has a positive and significant impact on the value of a company. The researchers came to the conclusion that this viewpoint applies exclusively to companies that have exceptional environmental performance and does not apply to companies that have woeful environmental performance[159].

A study was conducted on Environmental Management Accounting (EMA) practices and plastic pollution control in selected food and beverage firms. The focus of the study was on food and beverage manufacturing companies because these companies employ plastic items to package their products. A quantitative method was utilized, with 124 self-completed questionnaires distributed to 38 selected food and beverage manufacturing firms in Durban's and administered by finance managers, management accountants, factory accountants, and chief accountants of the companies. The results showed a significant relationship between environmental information and environmentally-related activities. The corporate environmental strategy and environmental information also have a positive correlation. Furthermore, a considerable positive correlation between environmental information and plastic pollution management was discovered and the relationship between environmentally-related activities and plastic pollution control demonstrated a non-significant correlation. The study recommended that companies in the food and beverage sector should establish sustainable environmental policies, including eco-friendly disposal programs for managing plastic trash[160].

Another scholar researcher conducted an exploratory research of the determinants of environmental disclosure quality in French publicly listed firms. Qualitative variables such as board independence, gender diversity, environmental performance, and company pollution level were utilized to identify the factors that influence environmental disclosure quality. The results demonstrate that a firm's strategy and vision (environmental audit), board diversity (gender diversity), and environmental performance all play an important role in explaining differences in environmental disclosure quality[161].

Similarly, another related study examines environmental performance, environmental disclosure, and firm value. The sample was selected from forty four (44) companies quoted on the Indonesian Stock Exchange from 2012-2018.The samples included Thirty-three (33) companies in the manufacturing sector, four (4) in the agricultural sector, six (6) in the mining sector, and one (1) in the conglomerate sector. With a firm year observation of 308 spanning seven (7) years from 2012 to 2018, it is projected that the independent factors will manifest on the dependent variable over a lengthy period of time. Tobin Q's dependent variable was utilized as a proxy for company performance. Tobin Q is the ratio of a firm's market value to the cost of replacing its assets[162].

A related study analyzed the effect of environmental accounting on corporate performance in Istanbul Province. The study used primary data through the administration of structured questionnaire and multiple regression analysis was utilized to examine the hypothesis. Environmental accounting was found to have a considerable impact on business performance, as assessed by planning and costing, responsibility and image, environmental sustainability, certification and qualification, and environmental consciousness[163].

Contrarily, a study on the influence of environmental accounting on profitability of oil and gas companies in Nigeria was conducted spanning from 2012-2017. Correlational, historical and explanatory design was adopted using secondary data collected from annual reports and

accounts of the selected companies; the results of the regression analysis revealed an insignificant correlation between environmental cost and net profit of oil and gas companies listed on the Nigerian Stock Exchange[164].

A study scrutinized how environmental disclosure influenced the return on asset using secondary data collected from annual reports of twenty-six (26) food, tobacco and beverages manufacturing companies listed on the Colombo Stock Exchange. The results of the regression analysis result revealed that environmental accounting disclosure and firm size had a positive and significant impact on return on asset, but liquidity had an insignificant impact[165].

A study in Philippine examine the impact Environmental Accounting Disclosure (EAD) on the firm's profitability and firm value of petrochemical industry in the Philippines. The study sampled thirty (30) publicly-listed chemical, mining and oil companies under the Petrochemical Industry in the Philippines. Environmental and financial data were obtained from the Annual Reports and Annual Corporate Governance Reports of these companies spanning from 2015-2019. Environmental Accounting Disclosure (EAD) was measured using EAD Index, Profitability was measured using Return on Assets, Return on Equity, Net Profit Margin, and Debt to Equity Ratio, while firm value was assessed using Tobin's Q. However, the size and age of the firm were utilized as moderating variables. The result showed that firm value has insignificant relationship with Environmental Accounting Disclosure index and profitability has a positive relationship with Environmental Accounting Disclosure index[166].

A study investigated the effect of non-financial information on shareholders' investment decision making using the statistical test tool of OLS with the variable of ROA and environmental disclosures as indicators for non-financial information The findings revealed that the rate of firms' environmental disclosures influences their performance, and suggested

that corporate bodies should increase the capacity of disclosures in their reports for investors' consumption[167].

Also, a research in Japan examines the impact of environmental disclosures and corporate performance. The study discovered a significant positive relationship between the level of environmental disclosure and ROA of firm performance[168].

In a similar vein, a study investigates corporate social sustainability reporting and financial performance of oil and gas industry in Nigeria. The study evaluate the influence of corporate social sustainability reporting on Return on Equity, Return on Assets, and Return on Capital Employed of oil and gas companies listed on the Nigeria Stock Exchange. The study sampled ten oil and gas companies and it make use of secondary information gathered through content analysis, individual company accounts and financial ratios. The results demonstrated that social sustainability reporting has a detrimental impact on all three performance indicators, but only the impact on return on equity was significant statistically[169].

A study was conducted on environmental costs and financial performance of oil and gas companies on the Nigeria stock exchange. The article objective are to determine the impact of environmental remediation costs on the Tobin's Q of oil and gas companies listed on the Nigerian Stock Exchange and assess the impact of compliance costs on Tobin's Q. The study utilized an Expo-facto research design and data were obtained from the audited financial statements of eleven (11) oil and gas companies over a twelve (12) year period spanning from 2008-2019. The study findings revealed that Remediation Cost and compliance costs have a significant impact on the Tobin's Q of oil and gas companies listed on the Nigeria Stock Exchange. The study recommended that oil and gas companies should be environmentally friendly since environmental remediation costs and financial performance have a positive relationship[170].

Furthermore, a study analyzes the effect of sustainability report disclosure aspects and their influence on the companies' performances. The study was executed using conventional positivistic quantitative approach to test the three formulated hypotheses which are the economics, environmental, and social aspects. The 44 observations from all listed companies on the Indonesia Stock Exchange (IDX) that publish sustainability reports in accordance with GRI-G4 guidelines made up the samples The findings demonstrated that economic, environmental, and social factors positively and significantly affect the market performance of the companies[127.]

A study investigated on environmental accounting and financial performance of Nigerian oil and gas companies spanning from 2016-2017. The study made use of secondary data and the data was obtained from the Nigerian Stock Exchange (NSE) (Annual Reports and Accounts of the Oil companies in Nigeria. Based on the availability of annual reports the researcher randomly chose eleven (11) oil and companies operating in Nigeria. The performance was measured using return on equity (ROE), earnings per share (EPS), Dividend per share (DPS) and net profit margin (NPM) as proxies while the environmental accounting disclosure cost was used to measure the independent variable. The data was analyzed using multiple regression analysis through econometric model and the findings revealed that there is no correlation between environmental disclosure and financial performance[171].

Contrarily, a study analyzes the impact of environmental costs on the performance of some quoted manufacturing firm in Nigeria. Environmental training cost, donations and charitable cost, waste management cost and corporate social responsibility cost are utilized as proxies for environmental cost and return on asset as the proxy for performance. The ex-post facto research design was employed and data were obtained from the selected companies annual financial statement spanning from 2011-2020. The Augmented Dickey-Fuller unit root test statistic was used to test the stationarity of the data and Panel Least Square method was used

to analyze the data. The study findings revealed that environmental training cost, donations and charitable cost, waste management cost and corporate social responsibility cost had positive and significant influence on return on asset of manufacturing firms in Nigeria. The study recommended that to ensure smooth and ongoing operations, manufacturing firms should focus on waste management, environmental education, charitable giving, and maintaining a socially responsible attitude toward the host communities [172].

Another study examined the impact of corporate social responsibilities and financial performance of Nigerian listed manufacturing firms. The study investigated how the four CSRD dimensions—(human resources, environment, community, and product) have impact on the Earnings per Share (EPS) of the sampled firms. Ten (10) manufacturing companies were randomly selected from seven (7) different subsectors of the Nigerian manufacturing companies. Secondary data were gathered from the financial statements of the sampled firms and analyzed using multiple regression analysis. The findings discovered that there is an overall positive significant correlation between CSRD and EPS and that all four of the CSRD dimensions: employee, environment, community, and product has a positive significant impact on EPS. The study recommended that management of listed manufacturing companies in Nigeria should address CSR and CSRD with a more positive frame of mind, by recognizing them as an investment instead of liability[173].

A study on environmental disclosure effects on returns and market value was investigated and the study aims to find out whether there is a relationship between the level of environmental information disclosure and the firm's return on assets. Two performance measures was used, Return on equity (ROE) and Return on Asset (ROA). This is because Return on Equity (ROE) represents the company's profitability concerning its shareholders' equity, while Return on Asset (ROA) represents the profitability, before taxes, of the firm's

assets. The usage of Return on Asset (ROA) maintains all of the invested capital, whereas Return on equity (ROE) just measures profitability in terms of equity[174].

In addition, a study in Kenya assesses the effect of corporate environmental disclosure on the financial performance of listed companies on the Nairobi Securities Exchange. The study uses explores longitudinal secondary data from the annual reports and financial statements of 61 listed companies, 32 of which were utilized in the study. Environmental disclosure practices were examined through the use of content analysis of annual report of sampled listed companies. Environmental disclosure indices were computed and a checklist environmental disclosure items and categories were developed. To establish the cause-and-effect relationship between corporate environmental disclosure and financial performance, a causal research design was utilized. The causal correlation between environmental disclosure and financial performance was determined using a linear regression model. The model's overall significance was discovered. Environmental disclosure is unaffected by company size or leverage. The findings revealed that Environmental disclosure has a positive substantial effect on mean financial performance. The study suggested that companies should involve in environmental disclosure because it leads to improved financial performance[175].

Another study investigate the extent to which Accounting practices influence the profitability of Nigerian oil and gas companies, specifically those in the upstream sector. The particular goals were to measure the impact of accounting practices on the Return on Assets (ROA) and Return on Capital Employed (ROCE) of Nigerian oil and gas companies. From the population which constituted the Oil and gas companies in Nigeria, eighty-four (84) responders in total were chosen at random. The approach of Stratified Sampling Design was employed by the researchers. The study utilized both primary and secondary data. While secondary data were gathered from previously published materials, primary data were

gathered using questionnaires designed using the Likert's Scale, which has five points spanning from very little to no extent. Using the SPSS software and other descriptive statistical tools, like percentages and tables, data was analyzed and hypotheses were formulated. The study's findings demonstrated a considerable correlation between accounting practices and oil and gas company performance, specifically in terms of return on assets and return on capital employed[176].

Also, a study assesses environmental accounting disclosure and financial performance of listed multinational corporations in Nigeria. This study was carried out by examining first the level of compliance and then investigating the impact of environmental disclosure on financial performance with concentration on multinational companies in the face of ongoing environmental discrimination seen in the Nigerian business sector due to the lack of sustainability reporting legal framework. Secondary data from the companies' published annual reports from 2011 through 2020 was utilized in the study. Descriptive statistics and panel regression analysis were used to assess the data collected (Environmental disclosure index, return on asset, earnings per share). When the level of compliance was assessed, it was found that oil and gas was the least compliant of the three sectors examined. The findings indicated that environmental accounting disclosure has a significant and positive impact on earnings per share (EPS), but a negative and insignificant impact on return on asset (ROA)[177].

Another study looks at the impact of environmental and social disclosures on the financial performance of oil and gas companies in Nigeria. Return on asset (ROA) is used as an indicator for financial performance and environmental and social disclosures as independent variables. The study employs a panel regression model to examine the estimates of the statistical parameter and develops two hypotheses to carry out the study. Data were gathered from the Nigeria Stock Exchange (NSE) Factbook as well as published financial statements of the oil and gas companies listed on the Nigeria Stock Exchange (NSE) spanning from 2010

to 2019 and Ex -Post facto design was utilized. The study's results indicate that corporate environmental and social disclosures have a significant impact on companies performance at a 5% level[178].

Furthermore, another study investigated the effect of environmental accounting disclosure on financial performance of listed cement companies in Nigeria. The research design used in the study was expo facto research design and data were gathered from the annual report and accounts of three cements companies listed on the Nigerian Stock Exchange spanning from 2011 - 2019. The study was analyzed using estimated panel regression method and descriptive statistics. The findings of the study demonstrated that environmental accounting disclosure significantly and positively affects the financial performance of listed cement companies in Nigeria[179].

A study was conducted in Iraq on the impact of environmental costs dimensions on financial performance: role of environmental disclosure as a mediator of Iraq industrial companies. The study is based on secondary data and the data were obtained from the annual reports of 25 selected companies on the Iraqi stock exchange and oil and gas sector spanning from 2014 to 2018.For the data analysis, multiple regression was utilized and the study demonstrates that environmental costs dimensions: (Conventional costs, hidden environmental costs, and the Image & Relationship costs) have an insignificant impact on financial performance while social costs, and contingent costs have a positive impact on financial performance. Regarding the second direct correlation between the independent variable and the mediator variable, the findings revealed that environmental costs dimensions (Image & relationship costs, hidden costs, social costs, and Contingent costs) have a positive correlation with environmental disclosure and Environmental Conventional costs have an insignificant impact on environmental disclosure[180].

A study was conducted on Environmental Accounting Disclosures and Tax Aggressiveness of Quoted Firms in Nigeria. The study is important because it illustrates how much environmental accounting disclosures affect companies' tax-aggressiveness. Waste management disclosure (WMD), environmental remediation disclosure (ERD), and pollution control disclosure (PCD) were used as proxies for environmental accounting disclosures in this study using the GRI G4 on content index, and Effective tax rate (ETR) served as the Proxy for Tax aggressiveness. Three hypotheses were developed to direct the study, and an OLS regression model run by STATA V.15 was used to perform a statistical test of parameter estimations. Data for the study was gathered from the public annual financial reports of all ICT firms, healthcare companies, and oil & gas companies listed on Nigerian Exchange Group (NGX) for the period of 2013–2020, and ex post facto design was utilized. The study's findings typically show that environmental remediation disclosure, pollution control disclosure, and waste management disclosure all have significant and positive effect on a firm's tax aggressiveness as measured by its effective tax rate (ETR) at significant levels of 1 to 5 percent, respectively. The study concluded that environmental accounting disclosures influence the tax aggressiveness of public listed firms[181].

In a study titled discretionary environmental disclosures of corporations in the Nigeria context. The study utilizes a quantitative research approach to produce empirical evidence on the determinants of the extent of environmental disclosure in Nigerian listed companies as part of a voluntary initiative. It also adopt the binary probit regression model for data analysis and content analysis approach to determine the level of environmental disclosure in the annual reports of listed Nigerian Stock Exchange corporation. The results demonstrate that key determinants of the level of environmental disclosure include firm attributes like firm size, performance, cash flow, and age of the firm and this outcome is related to weak institutions and a lack of pertinent regulatory requirements[182].

A study investigated the impact of environmental accounting on the performance of family-owned companies in Nigeria. The study utilizes community development costs, restoration cost and health & security costs as proxies for environmental accounting. Ex-post facto research design was employed and the study's population included all twelve (12) family-owned industrial and oil and gas sectors companies listed on the Nigerian Stock Exchange (NSE). Six (6) family-owned firms that disclosed environmental information were chosen using a purposive sampling technique. Data were gathered from the annual reports of the family-owned companies ranging from 2012 to 2020. For the data analysis, the study employed descriptive statistics, correlation, and Ordinary Least Squares method. The findings revealed that community development costs have a negative and significant impact on the financial performance, restoration cost has a negative and insignificant and health safety costs have a positive and insignificant impact on financial performance. The study concluded that only health and safety costs have the capacity to improve the performance of family-owned companies in Nigeria[183].

A study was conducted to analyze the impact of Environmental Disclosure and Financial Performance of Listed Non-Financial Companies in Nigeria. From the total population of one hundred thirteen (113) companies, a sample of seventy-six (76) companies classified as non-financial ware utilized. Data was extracted from audited annual reports and accounts from 2013-2020. Descriptive statistics and multiple regressions were used for the data analysis and the study employed explanatory research design to determine the impact of environmental disclosure on financial performance. The independent variable which is the Environmental disclosure was measured using an ordinal coding scheme based on GRI guidelines (G4), with a focus on environmental prevention expenditure disclosure, waste disposal cost disclosure and prevention environmental management cost disclosure as proxies while the dependent variable which is financial performance was measured by using earnings per share and

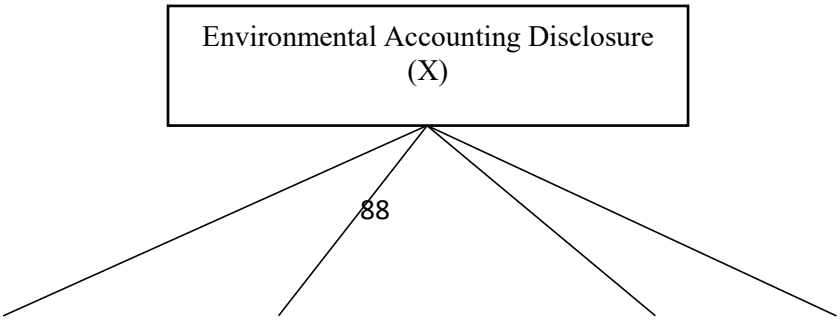
Tobin's Q as proxies. In order to validate the findings, robustness tests like the multicollonearity test, heteroscedasticity test, normality test, and Hausman specification test were conducted. The findings showed that there is a significant positive correlation between environmental prevention expenditure disclosures (EPED), waste disposal cost disclosure (WDCD), and prevention and environmental management cost disclosure (PMCD), and earnings per share (EPS), but a negative correlation with TQ of listed Nigerian non-financial companies. The study recommended that management of Nigeria's listed non-financial companies should raise awareness of the importance of Environmental prevention expenditure disclosures, Waste disposal cost disclosure and prevention of environmental management cost disclosure[184].

Another study empirically examined the effect of social and environmental disclosures on performance of non-financial firms in Nigeria. An ex-post facto research design was employed for the study by utilizing data collected from the Nigeria Stock Exchange (NSE) Fact book and published annual financial reports of the entire 112 non-financial companies listed on the Nigeria Stock Exchange (NSE) with data covering from 2011 to 2018. According to the findings of the study, social and environmental disclosures have a significant positive impact on net-asset per share (firm performance) over time. The study opined that companies should have a good mindset toward social and environmentally friendly practices[185].

In a study titled "Environmental Accounting and Tax Revenue of Listed Oil and Gas Companies in Nigeria." The study examined the correlation between environmental accounting and the rise in tax revenue in Nigeria from 2012 to 2018. It specifically examined whether environmental accounting has a potential correlation with education tax revenue growth. Data were acquired from annual reports of the listed oil and gas companies on the Nigeria stock Exchange as well as reports from the Planning, Reporting, and Statistics

Department of the Federal Inland Revenue Service (FIRS) for various years. For the data analysis, regression analysis was utilized. The findings revealed that the firms' environmental accounting initiatives have significant correlation with the growth of tax revenues in Nigeria, particularly those related to tertiary education tax revenue. The study concluded that the Nigerian stock exchange and other regulatory organizations in Nigeria should adopt and implement mandatory environmental accounting procedures by oil and gas corporations in Nigeria and that the government and regulatory authorities should take sanctions and other enforcement measures to guarantee thorough compliance[186].

2.4 Conceptual Model



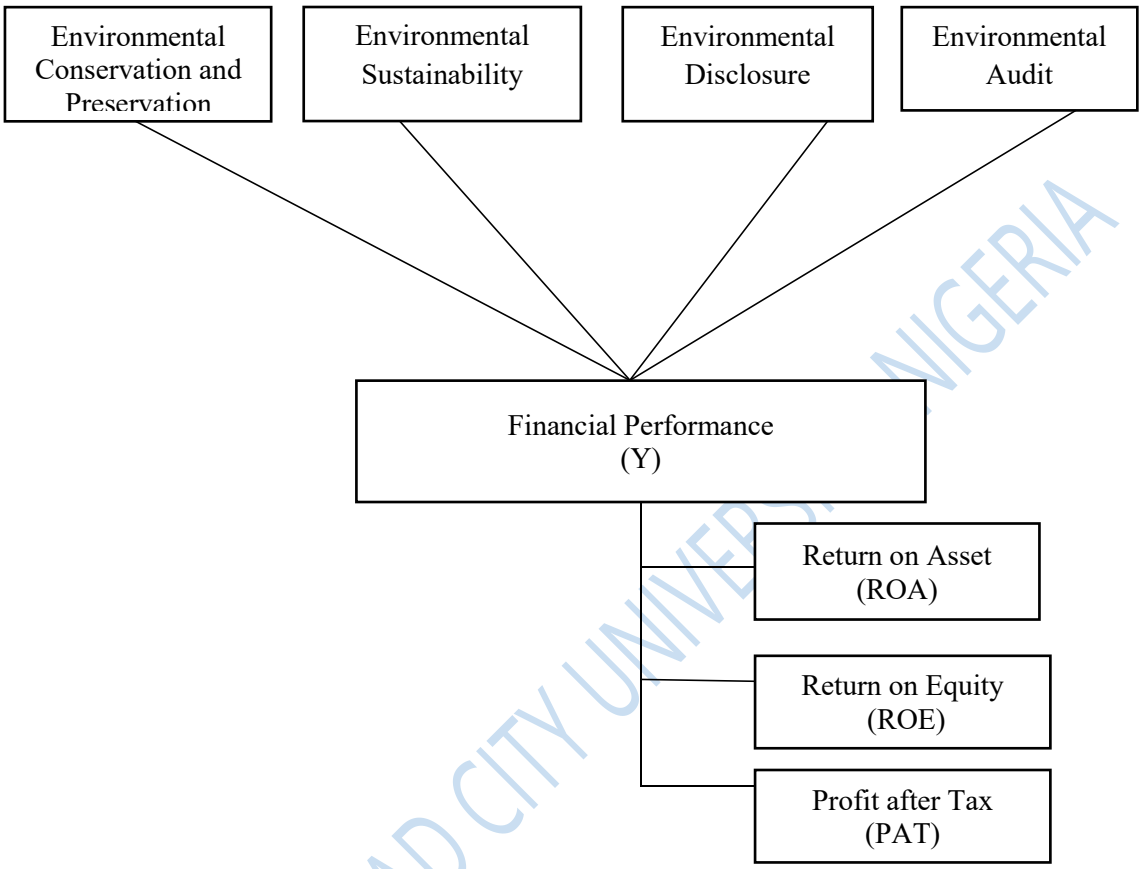


Figure 2.2: *Environmental Accounting and Financial Performance of Listed Oil and Gas Companies in Nigeria*

Source: Researcher's Conceptual Model 2022

2.5 Summary of Literature Reviewed

The study reviewed literature on Environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria. According to the reviews, there are both positive and negative effects, implying that disclosing environmental information will have an impact on the financial performance of Nigerian oil and gas companies. As a result, companies should disclose environmental information in their annual reports. Standardization of environmental disclosure reporting and mandatory disclosure of environmental

information in yearly reports are two potential solutions to the problem. The government should establish clear policies and standards for environmental disclosure and ensure that they are been implemented.

However, despite the large number of studies that have looked into environmental accounting disclosures, most of which approached the investigation on the social cost, financial implications, and stakeholder perceptions, quite few studies have however investigated how environmental performance of oil and gas companies in Nigeria influences their financial performance.

It is there the focus of this study to further investigate this phenomenon by assessing the mutual inclusiveness and correlation that exist between environmental accounting disclosure and financial performance of oil and gas companies in Nigeria.

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Chapter Three

Methodology

This chapter discusses the different methodologies adopted in answering the research questions of the study. Some of the areas discussed are; research design, population, sample size, sampling technique, research instruments, method of data collection and method of data analysis.

3.1 Research Design

This study adopt *ex-post facto* research design because the study rely on secondary data on environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria and data was extracted from published annual reports of oil and gas firms.

3.2 Population

The population of a study can be represented as a social phenomenon, geographical context or a cultural context. The population of this study consists of all the thirteen (13) listed oil and gas companies on the Nigerian Stock Exchange as at 31st December 2020. This list includes the following: Mobil Plc, Seplat Petroleum, Forte Oil Plc, Anino International Plc, Rak Unity Petroleum.Company. Plc, Capital Oil Plc, M.R.S Oil Nigeria Plc, Conoil Plc, Eterna Plc, Japauloil Plc, Oando Plc, Development Company Ltd and Total Nigeria Plc.

3.3 Sample Size and Sampling Technique

In research methodology, the term sample size includes a subgroup extracted from the population either selected purposively, randomly or through various sampling technique that are most relevant for a study[1]. Census sampling technique was used to select all the thirteen

(13) listed oil and gas companies on the Nigeria stock exchange as at 31st December 2020. However, due to incomplete data set from two of the companies, the study focused on eleven 11 companies listed oil and gas companies on the Nigerian Stock Exchange as at 31st December, 2020 spanning from 2011-2020.

3.4 Description of Research Instrument

Research instruments are statistical tools that are implemented in gathering data, some of which include; questionnaire, focus group discussion (FGD), In-depth interview, content analysis among several others[2]. This study being a quantitative research adopted content analysis as its research instrument. This study adopted content analysis as its research instrument because data was obtained from the published annual reports of oil and gas companies listed on Nigerian Stock Exchange as at 31st December 2020.

3.5 Method of Data Collection

In research methodology, method of data collection involves the various ways or techniques a researcher adopts in gathering data. This study relies heavily on secondary data, as it extract data from the annual reports and account of the oil and gas companies listed on the Nigerian stock exchange market for all the years covered by the study.

3.6 Method of Data Analysis

Method of data analysis refers to the many techniques a researcher can adopt in interpreting and analyzing data gathered either from primary or secondary sources. In most cases the method of data analysis a research work adopts largely thrives on which is most appropriate in showing the relationship between the two variables[3].

In analyzing the gathered data, panel regression technique was adopted because it recognized as a method of data analysis with the best unbiased, efficient and adopts a less complex technique in analyzing data.

3.7 Description and Measurement of Data

Variables	Description	Measurement
Return on Asset (ROA)	ROA measures the profitability of a business in relation to its total asset	Net Income / Average total asset
Return on Equity (ROE)	ROE indicate how much returns is created by investor about invested fund by them.	Net Income / Shareholders Equity
Profit after Tax (PAT)	PAT is the profit available after all expenses and taxes have been deducted.	Profit before tax – Tax rate

Source: Researchers Findings 2022

3.8 Model Specification

The Functional equation depicts the relationship between the explanatory variables and financial performance as explained by the following regression model, which is adapted from[4];

finPerf = f (EAD) ---------- equation (1)

To write it in a more explicit functional equation, it becomes;

ROA_i = (sus, cons, Audit, Env Disclosure)---------equation (2)

ROE_i = (sus, cons, Audit, Env Disclosure) ----- equation (3)

$PAT_i = (\ sus, cons, Audit, Env\ Disclosure)$ ------ equation (4)

$$ROA_i = \beta o\ +\ \beta_1 Sus + \beta_2 Cons\ +\ \beta_3\ Audit + \beta_4\ Env\ Disclosure_i + \mu \text{ -------- } (5)$$

$$ROE_i = \beta o\ +\ \beta_1 Sus + \beta_2 Cons\ +\ \beta_3\ Audit + \beta_4\ Env\ Disclosure_i + \mu \text{ -------- } (6)$$

$$PAT_i = \beta o\ +\ \beta_1 Sus + \beta_2 Cons\ +\ \beta_3\ Audit + \beta_4\ Env\ Disclosure_i + \mu \text{ -------- } (7)$$

Where:

ROA = Returns on Asset (Proxy for Financial performance)

ROE= Returns on Equity (Proxy for Financial performance)

PAT= Profit after Tax (Proxy for Financial performance)

Sus= Environmental sustainability

Cons = Environmental conservation and preservation

Audit = Environmental Audit

Env Disclosure = Environmental disclosure

e= error term

β =Constant

Endnotes

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Chapter Four

Results and Discussion of Findings

4.1 Demographic Data Analysis

This chapter presents the analysis and interprets data collected on environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria. In investigating the mutual inclusiveness between environmental accounting disclosure and financial performance in Nigeria's oil and gas industry, this study adopted a sample size of 11 firms based on Census sampling technique. Findings from the data gathered from published financial reports and environmental Accounting disclosure are presented below using E-views 9 Econometric Analytical tool. In answering the research objectives as postulated by this study, this study adopted both descriptive and econometric techniques in analyzing the data of interests to obtain both the estimates of the variables over the time frame of study. The reasons for the selection of the 11 firms is largely down to the availability of the data, which makes analysis easier and comprehensive, below is the list and the proof of the availability of data of the selected firms.

Table 4.1 Demographic Data Presentation

S/N	NAME	Years Observed
1	Mobile Plc	2011 to 2020
2	Conoil Plc	2011 to 2020
3	OANDO Plc	2011 to 2020
4	Total Nigeria Plc	2011 to 2020
5	Anino International	2011 to 2020
6	Capital Oil Plc	2011 to 2020
7	Seplat Plc	2011to 2020
8	Eternal Plc	2011 to 2020
9	Mrs Oil Nigeria Plc	2011 to 2020
10	RAK Unity Pet. Company Plc	2011 to 2020
11	Japaul Oil &Martime Services Plc	2011 to 2020

Source: Author's Fieldwork, 2022.

4.2 Presentation of Data

The data of the study is attached as an appendix which comprises of environmental accounting disclosure proxies (Environmental Conservation and Preservation, Environmental Sustainability, Environmental Audit and Environmental Disclosure) and financial performance proxies (Return on Asset, Return on equity and Profit after tax).

Whilst the econometric analysis was analyzed through the use of the Panel regression analysis (fixed effect) technique, moreover, the descriptive analysis was examined making use of the summary of statistics of the variables. The econometric tool of Econometric-View (E-views) statistical package was used in conducting both analyses. The study begins with a descriptive analysis of all the variables. The observation of the study made use of a sample of 10 years spanning from 2011-2020.

Table 4.2 Summary of Descriptive Statistics

	ROA	**ROE**	**PAT**	**Environmental conservation & preservation**	**Environmental sustainability**	**Environmental disclosure**	**Environmental Audit**
Mean	0.016063	1.6740	458042	0.000000	0.67894	2.778947	313.3263
Median	0.0267	2.5711	145304	0.0000	0.0000	0.0000	17.00000
Maximum	1.7626	176.2669	964160	0.0000	50.0000	50.0000	1150.000
Minimum	-0.7349	-73.4942	-1.8408	0.0000	0.0000	0.0000	0.0000
Std. Dev.	0.2211	21.0771	265329	0.0000	5.1208	10.0540	357.8324
Skewness	4.6064	4.6278	-2.1473	NA	9.55360	4.4166	0.644950
Kurtosis	43.73880	45.6787	27.5595	NA	92.5198	20.93157	2.039962
Jarque-Bera	6905.426	8741.082	2849.071	NA	33166.45	1581.624	10.23432
Probability	0.0000	0.000000	0.0000	NA	0.0000	0.0000	0.0059
Sum	1.5259	184.1508	5.0408	0.0000	64.5000	264.0000	29766.00
Sum Sq. Dev.	4.5952	48422.86	7.6716	0.0000	2464.958	9501.858	120361
Observations	110	110	110	110	110	110	110

Source: ***Author's Computation from E-views (2022)***

The Table 4.2 presents the descriptive statistics of all the variables utilized for the study and from the results obtained it is indicated that all the mean values of all variables used were

reported to be positive. This implies that all the variables used have recorded an increasing trend for most periods of the years being studied (that is 2011-2020). The maximum and minimum values indicate the highest points and lowest points of the variables throughout the study period.

The maximum value for Return on Assets (ROA) during the period under study was 1.7626 while the minimum, which is the lowest -0.7349, indicating that the returns on assets was decreasing at some point for some of the firms in the gas sector.

The mean for PAT and ROE are 45804 and 1.6740 respectively, with kurtosis values at higher then 3, to be 27.559 and 45.678 respectively. The almost nil values for Environmental conservation & preservation indicate that almost all firm in the oil and gas sector do not report on the variable.

The standard deviation for the Environmental disclosure is at 10.0540, with mean and 2.778947, all the variables have their kurtosis values 20.93157, ROA (43.7388), environmental Sustainability (92.5198), except for Environmental Audit, which is at 2.5 the normal distribution point, indicate that they are mostly clustered around their mean. Also, the Jarque-Bera probability all variables which have its value to be less than the 5% level of significance ($P < 0.05$) further reveals a statistically significant deviation of the variable from normality.

The total observation is 110 because it comprised of the data from 10 listed oil and gas companies in Nigeria over a period of 10 years

Unit Root Test of Stationarity

Table 4.3 Panel Unit Root Test Result (ADF)

Variables	ADF Test Statistics Level		ADF Test Statistics 1st Difference		ADF Test Statistics 2nd Difference		Order of Integration
	Statistical value	5% critical Value	Statistical value	5% critical value	Statistical value	5% critical value	
Environmental Conservation & preservation	11.356707	0.0986	3.434978	0.0345	N/A	N/A	I(1)
Environmental sustainability	3.80131	0.7035	17.0435	0.0334	N/A	N/A	I(1)
Environmental disclosure	5.29234	0.7259	7.65303	0.0264	N/A	N/A	I(1)
Environmental Audit	15.3792	0.6358	32.1580	0.0211	N/A	N/A	I(1)
ROA	28.4926	0.1599	40.0329	0.0107	N/A	N/A	I(1)
ROE	28.1831	0.1697	47.7205	0.0012	N/A	N/A	I(1)
PAT	51.0246	0.0004	N/A	N/A	N/A	N/A	I(1)

Source: Author's Computation from E-views (2022)

The a priori expectation when using the Augmented Dickey-Fuller (ADF) test is that a variable is stationary when the value of the Augmented Dickey-Fuller (ADF) test statistic is

higher than the critical value at 5%. All of the variables utilized met this a priori expectation at first difference. The above empirical ADF test in Table 4.3 shows that all the variables are integrated of order one (1) with intercept and trend and intercept, meaning they are integrated of the same order; I (1) and free of the problems caused by Unit Root

Correlation Analysis

Table 4.4 Correlation Matrix of Dependent and Independent Variables

	ROA	Environmental Conservation and Preservation	Environmental disclosure	Environmental sustainability	Environmental Audit	PAT	ROE
ROA	**1.0000**						
Environmental Conservation & Preservation	0.000	**1.0000**	-				
Environmental disclosure	0.0188	-0.3750	**1.0000**				
Environmental sustainability	0.0272	0.2580	-0.0290	**1.0000**			
Environmental Audit	0.0991	0.7717	0.2202	-0.0107	**1.0000**		
PAT	0.6816	0.0256	0.3858	0.7025	0.0745	**1.0000**	
ROE	0.4783	0.3023	0.3802	0.4209	0.1259	0.4222	**1.0000**

Source: Correlation Matrix results from E-views 9 (2022)

Note: All are at 5% significant level

The results from the table above shows that Return on Asset (ROA) correlates positively with the all the independent variables, though the correlation coefficient are positively weak, as none of the coefficients is up to r>=0.5 except for the rho (r) value of PAT and ROA, which is at 0.6816, however the correlation between PAT and environmental sustainability which is at 0.7025, indicates a strong positive relationship amongst the variables.

And vice versa as all the variables seems to have a strong positive correlation with one another. With the exception of profitability and growth of the firms, as their correlation coefficients is weak at 0.4200 and 4305 respectively. They also have a significant relationship as they all possess significant values of less than 5%, except for Age of the firms, which has a positive relationship with environmental disclosure but is insignificant.

Table 4.5 Relationship between Environmental Accounting Disclosure and Return on Asset
Fixed Effect Regression Model

Variable	Coefficient	Standard Error	T-statistic	Prob.
C	17.06454	2.189673	7.793192	0.0000
Environmental Conservation and Preservation	0.000249	0.002386	3.037535	0.0095*
Environmental sustainability	-3.173260	0.924995	-3.430570	0.0045*
Environmental disclosure	1.586902	0.851394	1.863886	0.0851
Environmental Audit	0.211854	0.291038	0.727924	0.4796
R-squared	0.8767	Durbin-Watson	2.3965	
Adjusted R^2	0.7863	F-statistic	9.4421	
Prob. (F-statistic)	0.00182			

Dependent variable: ROA
Source: Author's Computation from E-views (2022)
Asterisked prob. Values are significant

The regression analysis indicates that environmental conservation and preservation has a positive and significant impact on the ROA as for every 1% increase in disclosures on environmental conservation and preservation, the return on asset will invariably increase by about 0.2%.

The coefficient of Environmental Audit is positive, but insignificant with a coefficient of 0.212, which implies that the financial performance increases by about 21% with a 1% increase in environmental auditing, same can be said of environmental disclosure having a coefficient of 1.586902.

The R^2 (coefficient of determination) shows that approximately 87.9 % of the total variation in the dependent variable (Returns on Asset) can be explained by the explanatory variables and this drops to approximately 78.7 % after adjusting for degree of freedom which is still high. More so, from the result the DW (Durbin-Watson) statistic of approximately 2.39 is an indication of the absence of negative serial autocorrelation**.**

It was as well reported that the F-statistic reported in the table 4.5 which gives the goodness of fit of the model was approximately 9.4421 with a corresponding probability value of 0.00018. The significance of these values indicates that the data used in the estimation fitted well into the regression equation, hence the model is adequate in explaining the joint significant effect of the explanatory variables on the financial performance of oil and gas firms in Nigeria.

Table 4.6 Relationship between Environmental Accounting Disclosure and Return on Equity
Fixed Effect Regression Model

Variable	Coefficient	Standard Error	T-statistic	Prob.
C	7.0663	2.1896	3.2272	0.0000
Environmental Conservation and Preservation	-0.51939	5.314264	-0.09773	0.9229
Environmental sustainability	0.0934	0.014715	6.3506	0.0014*
Environmental disclosure	0.05132	0.023342	2.1986	0.0223*
Environmental Audit	0.0492	0.019732	3.24683	0.0240*
R-squared	0.7496			
Adjusted R^2	0.7268			
F-statistic	11.9822			
Prob. (F-statistic)	0.0182			
Durbin-Watson stat	2.0184			

Dependent variable: ROE
Source: Author's Computation from E-views (2022)
Asterisked prob. Values are significant

The regression result reveals that environmental conservation and preservation has a negative and insignificant effect on the return on equity, in terms of the effect of environmental accounting on financial performance of oil and gas firms, using the returns on equity as the metrics for financial performance, it could be observed that the coefficient of Environmental Audit and Environmental sustainability are both significant with a coefficient of 0.04929 and 0.09345 respectively, which implies that the ROE increases by about 4.9% and 9.3

respectively with a 1% increase in environmental auditing and sustainability. In the same vein, Environmental disclosure is also positive and significant; this implies that the ROE increases by about 5.1% with a 1% increase in the environmental disclosure.

The R^2 (coefficient of determination) shows that approximately 72.68% of the total variation in the dependent variable (Returns on Equity) can be justified by the explanatory variables and this drops to approximately after adjusting for degree of freedom which is still high. More so, from the result the DW (Durbin-Watson) statistic of approximately 2.018 is an indication of the absence of negative serial autocorrelation**.** the reported F-statistic and its probability value of 11.9822 and 0.0182 respectively signals the goodness of fit of the model and that the data utilized in the estimation fitted well into the regression equation, hence the model is adequate in explaining the joint significant impact of the explanatory variables on the financial performance of gas firms in Nigeria.

Table 4.7 Relationship between Environmental Accounting Disclosure and Profit after Tax
Fixed Effect Regression Model

Variable	Coefficient	Standard Error	T-statistic	Prob.
C	-0.038038	0.043308	2.185608	0.0478
Environmental conservation& preservation	0.0037	0.3407	0.0108	0.9287
Environmental sustainability	0.0336	0.0147	2.2857	0.0440*
Environmental disclosure	0.0125	0.0044	2.8409	0.0316*
Environmental Audit	0.4305	0.266572	1.615280	0.1236
R-squared	0.8465			
Adjusted R^2	0.8294			
F-statistic	3.0457	**Prob. (F-statistic)**	0.0272	

Durbin-Watson	2.0711

Dependent variable: PAT
Source: Author's Computation from E-views (2022)
Asterisked prob. Values are significant

Environmental conservation and preservation is positive but insignificant in influencing the profit after tax. Environmental sustainability and environmental disclosure significantly increases by 3.3% and 1.2% respectively, the coefficient of Environmental Audit is positive but insignificant with a coefficient of 0.04305 which implies that the Profit After Tax (PAT) increases by about 4.3% with a 1% increase in environmental auditing.

The R^2 (coefficient of determination) shows that approximately 82% of the total variation in the dependent variable (Profit After Tax) can be justified by the explanatory variables and this drops to approximately after adjusting for degree of freedom which is still high. More so, from the result the DW (Durbin-Watson) statistic of approximately 2.0711 is an indication of the absence of negative serial autocorrelation. the Fishers-statistic ratio of 3.0457 with probability value of 0.0272 shows that the model is good enough in determining the influence of the explanatory variables on the explained variables.

4.2.1 Presentation of Research Questions

Research Question One

How can environmental conservation and preservation have effects on financial performance of listed oil and gas companies in Nigeria?

Environmental conservation and preservation bears both negative and positive influence on the financial performance of oil and gas firms. It has a positive effect on both the PAT and ROA, with positive coefficient of 0.00025 and 0.0037 on ROA and PAT respectively, while it has a negative effect on ROE with a coefficient of -0.51939.

Research Question Two

To what extent can environmental sustainability affect financial performance of listed oil and gas companies?

Environmental sustainability has affected the financial performance, of the oil and gas firms in a positive way, as it has a positive coefficient of 0.0934 and 0.0336 with both ROE and PAT respectively, while the relationship with ROA is negative and significant with a coefficient of -3.1732.

Research Question Three

To what degree can environmental disclosure affect financial performance of listed oil and gas companies in Nigeria?

Environmental disclosure has a positive relationship with financial performance of oil and gas companies such that it assert a positive influence on ROA, ROE and PAT with a coefficient of 1.587, 0.05132 and 0.0125 with all being significant except for ROA which is insignificant at 5%.

Research Question Four

In what way does environmental audit have effect on financial performance of listed oil and gas companies in Nigeria?

The direction of relationship between Environmental audit and financial performance, of the oil and gas firms is positive with coefficients of 0.212, 0.0492 and 0.431 on ROA, ROE and PAT respectively.

4.2.2 Presentation of Hypotheses

Ho1: Environmental conservation and preservation has no significant effect on financial performance of listed oil and gas companies in Nigeria

Decision Rule: reject Ho1, if prob. Value < 5%, otherwise accept

Conclusion: Environmental conservation and preservation has probability values that are greater than 5% (prob. Value > 5%) in two of three models, which implies that it is not significantly related to the return of equity (ROE) and profits after tax (TAX), but it

significantly affects the Returns On Assets (ROA), this is because the deliberate efforts of the firms to preserve its assets and resources has further boosted the returns, which is earned on such assets; hence an improved financial performance of listed oil and gas companies in Nigeria. Conclusively, environmental conservation and preservation does not have a significant effect on the financial performance of oil and gas firms in Nigeria**.**

Ho2: Environmental sustainability has no significant effect on financial performance of listed oil and gas companies in Nigeria

Decision Rule: reject Ho2, if prob. Value < 5%, otherwise accept

Conclusion: Environmental sustainability has a negative relationship with financial performance, as it is significant on ROA, ROE and PAT with probability value less than 5% (prob. Value < 5%) at 0.0045, 0.0014 and 0.0440 respectively, it is on this basis we reject the null hypothesis and conclude that Environmental sustainability has a significant effect on financial performance of listed oil and gas companies in Nigeria.

This is largely down to the fact the environmental sustainability helps sustain the ecological environment of the firms. The significant relationship can also be attributed to investments in technologies, which reduces the risk associated with the destruction of the ecological system in addition to the regular environmental impact assessment, which leads to improved business operations arising from improved employee welfare, improved ecological environment have a positive impact on firm profitability and value.

Ho3: Environmental disclosure does not have any significant effect on financial performance of listed oil and gas companies in Nigeria

Decision Rule: reject Ho3, if prob. Value < 5%, otherwise accept

Conclusion: Environmental disclosure has a significant effect on ROE and PAT with probability values that is less than 5% (prob. Value < 5%) while it has an insignificant effect on ROA, the study here by reject the null hypothesis and conclude that Environmental disclosure has a significant effect on financial performance of listed oil and gas companies in Nigeria.

Ho4: Environmental Audit has no significant effect on financial performance of listed oil and gas companies in Nigeria

Decision Rule: reject Ho4, if prob. Value < 5%, otherwise accept

Conclusion: Environmental Audit has a positive relationship with financial performance, and its probability value is greater than 5% (prob. Value > 5%), we hereby fail to reject the null hypothesis and conclude that Environmental Audit has no significant effect on returns on assets (ROA) and profits after tax (PAT), but it significantly affects the returns on equity (ROE), Conclusively, we affirm that environmental audit has no significant effect on financial performance of firms in the oil and gas sector.

Post Diagnostics

Table 4.8 Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.
	0.011590	3

Cross-section random

Source: Author's Computation from E-views (2022)

Correlated Random effects-Hausman test: This is used as a test to determine the right model between the fixed and random effects model.

H0: Random effects model is appropriate

HA: Fixed effects model is appropriate

Decision Criterion: Reject H0 if probability value is less than 5%, Accept H0 if probability value is greater than 5%.

Conclusion: The probability value here is 0.011590 which is less than 5% thereby we reject the null hypothesis and conclude that the fixed effects model is appropriate. Hence there is no need to run the random effect.

4.3 Discussion of Findings

The study ascertained the effect of environmental Accounting disclosure on the financial performance of listed oil and gas companies in Nigeria. From the result, it is evident that Environmental conservation and preservation has probability values that are greater than 5% (prob. Value > 5%) in two of three variables, which indicates that it is not significantly related to the return on equity (ROE) and profits after tax (PAT), but it significantly affects the return on assets (ROA). Various empirical studies have however argued that concern for environment has increased across the globe, the society is particularly interested in knowing that companies are highly committed to environmental conservation and preservation, since environmental issues such as spillage, pollution, growth in energy utilization and ozone depleting substance discharges have continuously led many social and economic agents to believing that business operations are the reasons of these situations and this has created awareness for the organization to prove their environmental accountability by working harder on their environmental performance[1].

This study also investigated how environmental sustainability has effects on financial performance of listed oil and gas companies in Nigeria. Findings from the study showed that environmental sustainability has a significant effect on financial performance of listed oil and gas companies in Nigeria with profitability value that is less than 5% (prob. Value < 5%) in all the three model. This indicates that environmental sustainability is significantly related

with the return on asset, returns on equity and profits after tax. This is largely down to the fact the environmental sustainability helps sustain the ecological environment of the firms. This finding is consistent with previous research, which found that the profitability of firms is largely determined by the nature of the businesses in which they operate, as well as the potential legal, political, and environmental legislation that represent a significant item of public policy within the field of their operation[2]. Findings from this study also agrees with another study which concluded that manufacturing firms practice environmental sustainability as a form of being socially responsible which in the long run affects the financial performance of such organization, as this helps build a positive business perception in the industry which over the long run attracts investors and key stakeholders[3].

This study also examined the extent environmental disclosure affect financial performance of listed oil and gas companies in Nigeria. Findings from the study therefore revealed that Environmental disclosure has a significant relationship with financial performance as its probability value is less than 5% (prob. Value < 5%) in two of the three variables which indicate that it significantly affect ROE and PAT but it insignificantly affect the ROA. Therefore, the study hereby reject the null hypothesis and conclude that Environmental disclosure has a significant effect on financial performance of listed oil and gas companies in Nigeria. This result is however, consistent with previous studies which argued that environmental accounting disclosure has a positive significant effect on manufacturing firm's financial performance[4],[5].while this findings is in contrary to findings of some scholars who argued that environmental accounting disclosure has a negative effect on the financial performance of organizations[6].

It also revealed that Environmental audit has no significant effect on returns on assets and Profits after Tax (PAT) with a probability value that are greater than 5% (prob. Value > 5%) in two of the three variables but it significantly affects the returns on equity. This finding is

consistent with findings from previous studies who posited that by disclosing environmental information it will have a significant effect on the financial performance of oil and gas companies in Nigeria[7].

Endnotes

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Chapter Five

Conclusion

5.1 Summary of Findings

The effects of environmental pollution due to the activities of oil and gas companies brought about global debates on climate change, global warming, renewable energy, mitigation and how the environmental performance directly or indirectly affect their financial performance. As a result of the varying debates across previous empirical studies, the study examined the effect of environmental accounting disclosure on financial performance of listed Oil and Gas firms in Nigeria.

The first objective of this study is to determine the effect of environmental conservation and preservation on financial performance of listed oil and gas companies in Nigeria. The study revealed that environmental conservation and preservation does not significantly affect the financial performance of oil and gas companies. The regression further revealed that environmental conservation and preservation has no significant impact on return on equity (ROE) and Profits after Tax (PAT), but it significantly affects the returns on assets (ROA). This is because the deliberate effort of the firms to preserve its assets and resources has further boosted the returns.

The second objective was to ascertain the effect of environmental sustainability on financial performance of listed oil and gas companies in Nigeria. The analysis showed that environmental sustainability has a significant effect on financial performance of listed oil and gas companies in Nigeria. This indicates that environmental sustainability is significantly related with the return on asset, return on equity and profits after tax, this is largely down to the fact the environmental sustainability helps sustain the ecological environment of the firms.

Objective three was set to determine the impact of environmental disclosure on financial performance of listed oil and gas companies. From the analysis, environmental disclosure has a significant effect on financial performance of listed oil and gas companies in Nigeria. It further reveal that environmental conservation and preservation has significant impact on return on equity (ROE) and Profits after Tax (PAT), but it does not significantly affects the returns on assets (ROA).

The fourth objective was to investigate the effect of environmental audit on the financial performance of listed oil and gas companies in Nigeria. Analysis of the data gathered revealed that Environmental Audit has no significant effect on returns on assets (ROA) and Profits after tax (PAT), but it is significantly affects the returns on equity (ROE), this is because investors demand for and appreciate the audit of environmental accounting, which improves the ethical investments and value of the firms.

5.2 Conclusion

Based on the findings posited by this study, it is feasible to conclude that the profitability of firms is largely determined by the nature of the businesses in which they operate, as well as the potential legal, political, and environmental legislation that represent a significant item of public policy within the field of their operation The profitability of Oil and Gas firms in Nigeria largely thrives on their level of environmental accounting disclosure. This study therefore, concludes that oil and gas companies' operational environment and financial performance could both be improved by implementing sufficient environmental measures.

5.3 Recommendations

Based on the findings discovered from the foregoing data analysis and interpretation, this study therefore posits the following recommendations;

1. Organizations should implement universal reporting and disclosure of Environmental problems for control of and measurements of performance.
2. Functional and intractable environmental accounting units should be created by each oil company to make sure that the companies maintain their guidelines in reporting environmental problems in their annual reports and accounts, this way stakeholders would access this information and even vouch for them as socially responsible and this could bring about more investors to the companies.
3. Organizations should adopt environmental disclosure as a component of their business (ethical) model, as research has established that the more information an organization discloses about its sustainable practices, the more the public will perceive such organization as being socially and environmentally responsible.
4. Environmental conservation information should be made available to stakeholders, and organizations should make sure that emission control technology is implemented or used in their production processes, and the government should ensure that emission detecting technology is put in place in the country to help conserve the natural resources, which should be regularly monitored by the monitoring agencies.
5. Regulatory bodies and agencies can also create more policies that will encourage sustainability reporting, particularly among oil and gas firms in Nigeria.
6. Companies should show fines and penalties paid by the company, environmental liabilities of the company, environmental provisions and environmental cost capitalized in the notes to the accounts in their annual Report.
7. Regulatory bodies and agencies in oil and gas industry should also support the consolidation of data extracted from environmental reports to enhance performance.

5.4 Contribution to Knowledge

Findings from this study have enriched previous literature, specifically studies that investigated environmental accounting disclosure among oil and gas firms in Nigeria. Findings from this study can also be used to inform further studies that seek to explore the variables observed in this study.

5.5 Suggested Area of Further Research

Whilst this study investigated the effect of environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria, subsequent studies can examine the effect of environmental accounting disclosure on other sectors of the economy so as to enable generalization of findings.

Further studies may consider the same topic with a different methodology and they can also conduct an image audit of listed oil and gas firms and examine the extent public perception of their organizational activities affect firms.

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Appendixes

Panel unit root test: Summary
Series: AUDIT
Date: 01/20/22 Time: 04:46
Sample: 2011 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.85713	0.0021	9	71
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.01479	0.5059	9	71
ADF - Fisher Chi-square	15.3792	0.6358	9	71
PP - Fisher Chi-square	16.7296	0.5418	9	80

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(AUDIT)
Date: 01/20/22 Time: 04:50
Sample: 2011 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.34910	0.0000	9	62
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.80648	0.0354	9	62
ADF - Fisher Chi-square	32.1580	0.0211	9	62
PP - Fisher Chi-square	63.6636	0.0000	9	71

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: Environmental Disclosure
Date: 01/20/22 Time: 04:51
Sample: 2011 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.23916	0.1076	4	32
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.54313	0.7065	4	32
ADF - Fisher Chi-square	5.29234	0.7259	4	32
PP - Fisher Chi-square	3.31009	0.9134	4	36

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(ENVIRONMENTAL_DISCLOSURE)
Date: 01/20/22 Time: 04:51
Sample: 2011 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.45820	0.0724	3	21
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.40850	0.3415	3	21
ADF - Fisher Chi-square	7.65303	0.0264	3	21
PP - Fisher Chi-square	9.07898	0.0292	2	16

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: environmental sustainability
Date: 01/20/22 Time: 04:53
Sample: 2011 2020
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.61012	0.0537	3	24
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.28947	0.6139	3	24
ADF - Fisher Chi-square	3.80131	0.7035	3	24
PP - Fisher Chi-square	4.46327	0.6142	3	27

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: ROA
Date: 01/20/22 Time: 04:54
Sample: 2011 2020
Exogenous variables: Individual effects
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.14120	0.4439	11	77
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.11403	0.4546	11	77
ADF - Fisher Chi-square	28.4926	0.1599	11	77
PP - Fisher Chi-square	70.0414	0.0000	11	99

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(ROA)
Date: 01/20/22 Time: 04:54
Sample: 2011 2020
Exogenous variables: Individual effects
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.45642	0.0070	11	66
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.45823	0.0724	11	66
ADF - Fisher Chi-square	40.0329	0.0107	11	66
PP - Fisher Chi-square	110.911	0.0000	11	88

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

SN	Company	Year	Profit after tax	Total Assets	ROA
1	JAPAUL OIL & MARITIME SERVICES PLC	2011	980,438.00	27,274,499.00	0.0359471
2	JAPAUL OIL & MARITIME SERVICES PLC	2012	271,798.00	32,661,034.00	0.0083218
3	JAPAUL OIL & MARITIME SERVICES PLC	2013	239,746.00	38,028,239.00	0.0063044
4	JAPAUL OIL & MARITIME SERVICES PLC	2014	(2,638,494.00)	38,686,422.00	-0.068202
5	JAPAUL OIL & MARITIME SERVICES PLC	2015	(8,036,923.00)	33,889,616.00	-0.23715
6	JAPAUL OIL & MARITIME SERVICES PLC	2016	(22,010,184.00)	29,948,162.00	-0.734943
7	JAPAUL OIL & MARITIME SERVICES PLC	2017	(13,208,747.00)	28,001,565.00	-0.471715
8	JAPAUL OIL & MARITIME SERVICES PLC	2018	(6,593,632.00)	24,038,391.00	-0.274296
9	JAPAUL OIL & MARITIME SERVICES PLC	2019	40,917,299.00	23,213,258.00	1.7626694
10	JAPAUL OIL & MARITIME SERVICES PLC	2020	(1,181,849.00)	15,606,371.00	-0.075729
11	MOBIL OIL NIGERIA PLC	2011	3,754,676.00	30,755,210.00	0.1220826
12	MOBIL OIL NIGERIA PLC	2012	2,878,299.00	33,563,722.00	0.0857563
13	MOBIL OIL NIGERIA PLC	2013	3,480,785.00	40,728,522.00	0.0854631
14	MOBIL OIL NIGERIA PLC	2014	6,392,790.00	49,226,575.00	0.1298646
15	MOBIL OIL NIGERIA PLC	2015	4,872,929.00	54,072,089.00	0.0901191
16	MOBIL OIL NIGERIA PLC	2016			0.1321575

			8,154,293.00	61,701,329.00	
17	MOBIL OIL NIGERIA PLC	2017	7,518,733.00	74,848,928.00	0.1004521
18	MOBIL OIL NIGERIA PLC	2018	9,328,935.00	70,660,798.00	0.1320242
19	MOBIL OIL NIGERIA PLC	2019	8,883,749.00	91,199,284.00	0.0974103
20	MOBIL OIL NIGERIA PLC	2020	2,944,186.00	93,056,044.00	0.0316388
21	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2011	1,036,174.00	67,485,060.00	0.0153541
22	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2012	205,121.00	55,595,688.00	0.0036895
23	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2013	634,418.00	65,694,626.00	0.0096571
24	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2014	746,404.00	57,846,626.00	0.0129032
25	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2015	935,635.00	66,893,741.00	0.0139869
26	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2016	1,465,905.00	81,364,815.00	0.0180164
27	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2017	1,385,056.00	62,190,318.00	0.0222712
28	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2018	(1,264,941.00)	54,283,202.00	-0.023303
29	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC,	2019			-0.038544

	Texaco Nigeria		(1,704,010.00)	44,209,648.00	
30	MRS Oil Nigeria PLC (Chevron Oil Nigeria PLC, Texaco Nigeria	2020	(2,264,145.00)	36,659,094.00	-0.061762
31	CONOIL (NATIONAL OIL) PLC	2011	2,948,524.00	61,841,670.00	0.0476786
32	CONOIL (NATIONAL OIL) PLC	2012	714,981.00	83,095,975.00	0.0086043
33	CONOIL (NATIONAL OIL) PLC	2013	3,070,091.00	82,372,026.00	0.037271
34	CONOIL (NATIONAL OIL) PLC	2014	834,421.00	86,593,457.00	0.0096361
35	CONOIL (NATIONAL OIL) PLC	2015	2,307,558.00	69,387,365.00	0.0332562
36	CONOIL (NATIONAL OIL) PLC	2016	2,837,884.00	69,833,463.00	0.0406379
37	CONOIL (NATIONAL OIL) PLC	2017	1,578,507.00	62,855,084.00	0.0251134
38	CONOIL (NATIONAL OIL) PLC	2018	1,796,042.00	60,897,246.00	0.029493
39	CONOIL (NATIONAL OIL) PLC	2019	1,972,322.00	63,584,866.00	0.0310187
40	CONOIL (NATIONAL OIL) PLC	2020	1,440,185.00	48,864,665.00	0.0294729
41	ETERNAL OIL & GAS CO. PLC	2011	1,211,159.00	14,711,813.00	0.0823256
42	ETERNAL OIL & GAS CO. PLC	2012	946,356.00	33,212,850.00	0.0284937
43	ETERNAL OIL & GAS CO. PLC	2013	703,196.00	18,253,144.00	0.0385247
44	ETERNAL OIL & GAS CO. PLC	2014	1,289,565.00	18,566,894.00	0.0694551

45	ETERNAL OIL & GAS CO. PLC	2015	1,278,073.00	28,565,409.00	0.044742
46	ETERNAL OIL & GAS CO. PLC	2016	1,477,559.00	31,690,081.00	0.0466253
47	ETERNAL OIL & GAS CO. PLC	2017	2,001,902.00	48,045,732.00	0.0416666
48	ETERNAL OIL & GAS CO. PLC	2018	1,008,996.00	53,136,461.00	0.0189888
49	ETERNAL OIL & GAS CO. PLC	2019	(144,289.00)	28,533,386.00	-0.005057
50	ETERNAL OIL & GAS CO. PLC	2020	941,042.00	35,767,556.00	0.0263099
51	FORTE OIL (AFRICAN PETROLEUM) PLC	2011	(15,584,459.00)	48,876,767.00	-0.318852
52	FORTE OIL (AFRICAN PETROLEUM) PLC	2012	1,007,507.00	42,512,938.00	0.0236988
53	FORTE OIL (AFRICAN PETROLEUM) PLC	2013	5,004,397.00	104,678,000.00	0.0478075
54	FORTE OIL (AFRICAN PETROLEUM) PLC	2014	4,456,617.00	139,238,298.00	0.0320071
55	FORTE OIL (AFRICAN PETROLEUM) PLC	2015	5,794,055.00	121,757,956.00	0.0475867
56	FORTE OIL (AFRICAN PETROLEUM) PLC	2016	2,890,430.00	140,756,492.00	0.020535
57	FORTE OIL (AFRICAN PETROLEUM) PLC	2017	12,226,422.00	147,237,816.00	0.0830386
58	FORTE OIL (AFRICAN PETROLEUM) PLC	2018	8,344,406.00	141,537,600.00	0.0589554
59	FORTE OIL (AFRICAN PETROLEUM) PLC	2019	3,915,140.00	47,018,954.00	0.0832673
60	FORTE OIL (AFRICAN PETROLEUM) PLC	2020	1,857,969.00	64,846,460.00	0.0286518

61	OANDO (UNIPETROL NIGERIAN PLC) PLC	2011	3,446,643.00	400,864,761.00	0.008598
62	OANDO (UNIPETROL NIGERIAN PLC) PLC	2012	10,786,317.00	515,063,788.00	0.0209417
63	OANDO (UNIPETROL NIGERIAN PLC) PLC	2013	1,396,926.00	591,896,939.00	0.0023601
64	OANDO (UNIPETROL NIGERIAN PLC) PLC	2014	(183,893,186.00)	889,372,557.00	-0.206767
65	OANDO (UNIPETROL NIGERIAN PLC) PLC	2015	(31,197,703.00)	946,321,309.00	-0.032967
66	OANDO (UNIPETROL NIGERIAN PLC) PLC	2016	3,494,037.00	991,544,975.00	0.0035238
67	OANDO (UNIPETROL NIGERIAN PLC) PLC	2017	19,772,776.00	1,040,175,904.00	0.0190091
68	OANDO (UNIPETROL NIGERIAN PLC) PLC	2018	28,797,743.00	1,075,110,435.00	0.0267858
69	OANDO (UNIPETROL NIGERIAN PLC) PLC	2019	29,367,743.00	1,593,110,435.00	0.0184342
70	OANDO (UNIPETROL NIGERIAN PLC) PLC	2020	29,937,743.00	18,451,104,145.00	0.0016225
71	TOTAL NIGERIA PLC	2011	3,813,202.00	58,719,811.00	0.0649389
72	TOTAL NIGERIA PLC	2012	4,670,917.00	76,067,065.00	0.0614052
73	TOTAL NIGERIA PLC	2013	5,334,091.00	79,403,587.00	0.067177
74	TOTAL NIGERIA PLC	2014	4,423,733.00	95,512,428.00	0.0463158
75	TOTAL NIGERIA PLC	2015	4,047,051.00	83,653,555.00	0.0483787
76	TOTAL NIGERIA PLC	2016	14,797,095.00	136,928,160.00	0.1080647

77	TOTAL NIGERIA PLC	2017	8,019,298.00	107,981,873.00	0.0742652
78	TOTAL NIGERIA PLC	2018	7,960,983.00	132,520,783.00	0.0600735
79	TOTAL NIGERIA PLC	2019	2,278,979.00	133,787,731.00	0.0170343
80	TOTAL NIGERIA PLC	2020	2,063,385.00	143,612,885.00	0.0143677
81	CAPITAL OIL PLC	2011	(53,532.38)	2,250,194.00	-0.02379
82	CAPITAL OIL PLC	2012	36,435.11	2,726,696.00	0.0133624
83	CAPITAL OIL PLC	2013	(475,530.11)	1,860,098.57	-0.255648
84	CAPITAL OIL PLC	2014	(131,161.39)	1,669,707.59	-0.078554
85	CAPITAL OIL PLC	2015	(61,851.89)	1,645,944.69	-0.037578
86	CAPITAL OIL PLC	2016	(340,252.73)	1,306,856.12	-0.26036
87	CAPITAL OIL PLC	2017	(360,778.83)	1,130,972.78	-0.14216
88	CAPITAL OIL PLC	2018	(436,430.11)	1,120,672.78	-0.321931
89	CAPITAL OIL PLC	2019	(431,161.39)	1,114,272.78	-0.391673
90	CAPITAL OIL PLC	2020	(375,920.11)	1,025,267.78	-0.420535
91	RAK UNITY PET. COMPANY PLC	2011	2056	4715	0.4360551
92	RAK UNITY PET. COMPANY PLC	2012	6841	4715	0

93	RAK UNITY PET. COMPANY PLC	2013	1613	334005	0.0048293
94	RAK UNITY PET. COMPANY PLC	2014	53873	1185833	0.0454305
95	RAK UNITY PET. COMPANY PLC	2015	8976	696140	0.012894
96	RAK UNITY PET. COMPANY PLC	2016	53346	1409693	0.0378423
97	RAK UNITY PET. COMPANY PLC	2017	30351	1336315	0.0227125
98	RAK UNITY PET. COMPANY PLC	2018	29614	1993797	0.0148531
99	RAK UNITY PET. COMPANY PLC	2019	-39780	2033861	-0.019559
100	RAK UNITY PET. COMPANY PLC	2020	-64199	574946	-0.111661
101	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2011	8111000	104839000	0.0773662
102	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2012	16958000	139771000	0.121327
103	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2013	85431000	204564000	0.4176248
104	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2014	40481000	444026000	0.0911681
105	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2015	12993000	545198000	0.0238317
106	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2016	-45384000	664676000	-0.06828

107	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2017	96416000	799553000	0.1205874
108	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2018	44867000	799553000	0.0561151
109	SEPLAT PETROLEUM DEVELOPMENT COMPANY PLC	2019	85016000	1004233000	0.0846576